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THE

# MEDICO-CHIRURGICAL

# REVIEW,

AND

# JOURNAL OF PRACTICAL MEDICINE.

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# MEDICO-CHIRURGICAL REVIEW.

JULY, 1845.

I. The Cyclopædia of Anatomy and Physiology. Parts 25 and 26, 1844. Articles:—Nerve, Dr. *Todd;* Nervous System, (Comparative Anatomy,) by J. *Anderson*, Esq. Nervous Centres, Dr. *Todd.*

II. The Physiological Anatomy and Physiology of Man. By *R. B. Todd*, M.D., F.R.S., and *William Bowman*, F. R. S. Part II. 1845.

III. On the Nervous and Circulating Systems in Myriapoda and Macrourous Arachnida. By *G. Newport*, F.R.S. Philosophical Transactions. 1843.

IV. Ueber den Verlauf der Nervenfasern im Rückenmarke des Frosches von Dr. *Julius Budge.* Erfahrungen über die Functionelle Selbständigkeit des Sympathischen Nervensystems, von *F. Bidder.* Vorläufige Mittheilung über die Structur der Ganglien und den Ursprung der Nerven bei wirbellosen Thieren. Von Dr. *Friedrich Will.* Neurologische Erläuterungen, von Dr. *R. Remak.* Muller's Archiv. 1844.

V. Lehrbuch der Physiol. des Menschen. Band II. Von Dr. *G. Valentin.* 1844.

VI. Recher. Experim. sur les Fonctions du Nerf Spinal. Par *C. Bernard.* Archiv. Gen. de Med. 1844.

It must be confessed that, although within the last few years there has been no lack of labourers in the field of neurology, the actual progress has not been commensurate with all the toil and trouble that has been bestowed upon the subject. In some of the more recent contributions, indeed, and herein our friends of the German school have been the principal offenders, the tendency has been to retrograde. We certainly did not anticipate, and least of all in England, that a time would arrive when it would be necessary to vindicate the great principle announced by Bell, that principle upon which *all* accurate knowledge of the nervous system must ever repose, the individuality, namely, and uninterrupted continuity of the primary nervous filaments. Doubts have, however, been thrown upon this fundamental truth; and principally, as it would appear, on the faith of certain dissections and experiments of Stilling, from which it is inferred that the elementary fibres interlace and are fused one with an-

other in the spinal cord, in the several nervous plexuses, and in other parts of the system; that, in fact, the disposition of the nervous system "is precisely analogous to what is seen in the venous and lymphatic systems."* We believe this to be an entire fallacy, and unhesitatingly express our conviction, resting on repeated and careful examination, that no anatomist has *ever seen*, in any of the parts just mentioned, a true anastomosis in the sense of that existing in the vascular system. The only places where the primary nervous tubules do actually communicate is in their peripheral extremities, where, both in the muscles and in the tactile papillæ of the skin, they unite and form loops. It has also been asserted by Valentin, that a similar disposition prevails in the central ends, implanted in the grey matter of the brain, but, as we shall subsequently state, this must at present be held to be doubtful.

It is so essential to the physiology and pathology of the nervous system to establish the real relations of its component parts, that we conceive the best introduction to the subject before us, will consist of a brief reference to the disposition of the nervous tubules. And, in the first place, it may not be superfluous to remark that the functions of the blood-channels and nerves are so totally different, that it is surprising any comparison between them should have been attempted. It is the office of the blood-vessels not merely to carry the nutritive fluids to all parts of the body, but specially, by overcoming the repeated obstacles which impede the circulation, to secure, in the extreme divisions or capillaries, that uniform current which alone is compatible with healthy nutrition. Now, how is this to be accomplished?—clearly by providing free inter-communications between all the parts of the vascular system, and more particularly between its smaller divisions. Thus, as to the function of the blood-vessels, it matters not *how* the blood reaches its destination, provided it does but get there. But in the case of the nervous system all is reversed; here the whole action of innervation requires in theory what is shown by observation, a disposition of the nervous threads, which will enable them to act as isolated conductors, so as to transmit unmingled the mandates of the will centrifugally to special muscles, and centripetally the impressions made on the organs of sense to the brain.

In consequence of the unsatisfactory results of many of Stilling's researches, we have again cautiously examined the disposition of the primitive tubes in the spinal cord, with the express object of ascertaining if, in any part of the white substance, an anastomosis could be detected. All our examinations have shown that the fibres *invariably observe an isolated course*. When viewed with a sufficiently high power, an objective of one-sixth of an inch focus for example, the beaded particles are beautifully and distinctly seen in a perfectly recent specimen, and, mixed with them, branches of minute blood-vessels and capillaries; these latter canals, it is necessary to state, present appearances so deceptive, that to an unpractised eye, and especially when low powers are used, as was done by Stilling, they may very readily be mistaken for nervous tubes, and herein we believe will be found the source of the errors above noticed. The capillary vessels are seen branching and uniting, but they present physical

* British and Foreign Medical Review, 1844, p. 146.

marks, and especially nuclei, in their walls, which are quite distinctive: indeed we were never more impressed with the certainty and elucidation which microscopic examination confers on the great question of physiology, than by thus seeing under the eye the true characteristics of the vascular and nervous systems.

The conclusion at which we have ourselves arrived, as the result of direct inspection, is confirmed by the best observers. Thus Valentin, in his Physiology just completed, after pointing out and demonstrating the physiological necessity of isolated conductors in the peripheral portion of the nervous system, both as relates to sensation and motion, says, "We conclude, as a general anatomical proposition, that all ramifications, anastomoses, and interlacements of the nerves, are in reality only apparent, and therefore that no true divisions nor communications similar to those of the blood-vessels exist, but merely a corresponding entrance or exit of unbranched, uninterrupted primitive fibrils; a disposition which enables us easily to comprehend the laws of nervous conduction."—(*Lehrbuch der Physiol., Zweiten Band, p.* 589.)

In the same sense Dr. Todd, in his excellent article upon the nervous system (*Cyclop. of Anat. and Phys., Part* 25, *p.* 593,) thus expresses himself: "the nerve-tubes lie side by side, parallel, and sometimes have a wavy course within the general sheath. The relation of the nerve-tubes to each other is simply that of juxta-position. All observers, from Fontana down to those of the present day, agree in denying the existence of any inosculation or anastomosis between the fibres in vertebrate animals; and it seems almost certain that this complete isolation of the nerve-tubes is not limited to those of the nerves, properly so-called, but may be observed in the nervous centres also." A similar opinion is expressed by the same gentleman in the recent number of the Physiological Anatomy.

Although there is no real anastomosis, all the nerves, with the exceptions probably of the olfactory, optic, and perhaps of the acoustic, mutually interchange fibres, sentient nerves receiving motor fibrils, and muscular nerves receiving sentient twigs, by which their actions are modified in a most important manner.

In the preceding observations, there is expressed what we are convinced is the law which regulates the course of the nerve-tubes; and we only further remark that, if anatomists yield this fundamental fact in obedience to some recent, and in many respects defective, researches, they must at the same time be prepared to abandon that which is the key to all Bell's splendid discoveries, and to return to the chaos of confusion, uncertainty, and contradiction from which this, the highest branch of physiological science was rescued by our illustrious countryman.

In considering the works and papers before us, we shall commence with the

Structure of the Gray and Fibrous Substances.—Although organic chemistry is not sufficiently advanced to throw much light on the nervous system, it is interesting to know that, according to L'Heritié, the quantity of phosphorus found in the nervous matter varies considerably at different periods of life, and that it is very small proportionally in idiotcy. The following table of his comparative analyses, is taken from the Physiological Anatomy of Dr. Todd and Mr. Bowman :—

| | Infants. | Youth. | Adults. | Old Men. | Idiots. |
|---|---|---|---|---|---|
| "Albumen . . | 7·00 | 10·20 | 9·40 | 8·65 | 8·40 |
| Cerebral fat . . | 3·45 | 5·30 | 6·10 | 4·32 | 5·60 |
| Phosphorus . . | 0·80 | 1·65 | 1·80 | 1·00 | 0·85 |
| Osmazome and Salts | 5·96 | 8·59 | 10·19 | 12·18 | 14·82 |
| Water . . . | 82·79 | 74·26 | 72·51 | 73·85 | 70·93 |
| | 100·00 | 100·00 | 100·00 | 100·00 | 100·00." |

VESICULAR OR CORPUSCULAR NERVOUS MATTER.—This consists of a fine granular matter, in which are imbedded the well-known ganglionic corpuscles or verve vesicles. In the Physiological Anatomy the gray substance is thus described:—

"The essential elements of the gray nervous matter are *vesicles* or cells, containing nuclei and nucleoli. They have been also called *nerve* or *ganglion globules*. The wall of each vesicle consists of an exceedingly delicate membrane, containing a soft but tenacious finely granular mass. The *nucleus* of the cell is generally eccentric, much smaller than the containing vesicle, and adherent to some part of its interior. Its structure is apparently the same as that of the outer vesicle. The *nucleolus* is a minute, remarkably clear, and brilliant body, also vesicular, inclosed within the nucleus. It forms a most characteristic and often conspicuous part of the nerve-vesicle. The ordinary or prevailing form of these elements is that of a globular vesicle. So soft, and compressible are they, however, that a good deal of diversity of shape is manifest in them, by reason of the compression they suffer as they lie packed together *in situ*. Hence some are spherical, others ovoidal, or ellipsoidal. In some vesicles we find, external to the nucleus, particles of a coarser kind, which are accumulated in a mass, frequently of a semilunar form. These are pigment granules; their presence gives a dark colour to a portion of the vesicle. Sometimes we find two groups of pigment granules in one vesicle. They are usually of a reddish or yellowish brown colour." P. 213.

The work just quoted also gives a more satisfactory explanation of what are called "caudate" vesicles or corpuscles than has hitherto appeared:—

"Another form of nerve-vesicle is characterized by one or more tail-like processes extended from it, and to such nerve-vesicles we may apply the term *caudate*. They possess the nucleus and nucleolus, as in the more simple form; and contain one or more masses of pigment, which are often of very considerable size. Both the vesicles and their caudate processes vary greatly in size and shape. The largest nerve-vesicles are found among those of this kind. Sometimes there is but a single process from a vesicle; or there may be two, proceeding from opposite sides; or there may be several, extending in various directions. There is great difference in the shape of these caudate vesicles, as may be observed in figs. 55 and 56, where different varieties of them have been represented. In point of structure, the caudate processes are exceedingly delicate, and finely granular, like the interior of the vesicle, with which they distinctly seem to be continuous. Such is the delicacy of these processes, that they readily break off; in general, very close to the vesicle. Sometimes, however, one or more of them may be traced to a considerable distance, and will be found to divide into two or into three branches, which undergo a further subdivision, and give off some extremely fine transparent fibres, the connexion of which with the other elements of the nervous tissue has yet to be ascertained. It is most probable, however, that they either serve to connect distant vesicles, or else that they become continuous with the axis cylinders of the tubular fibres. In the cerebro-spinal centre, we have found the tissue in the vicinity of the caudate vesicles freely traversed in all directions by numerous very delicate filaments, which seem to be the ramifications of the caudate processes. These often exhibit considerable tenacity and elasticity." P. 214.

If the connexion between these vesicular prolongations and the nervous tubules should be proved, it would be one step gained towards the explanation of the connexion existing between the organ—the gray substance which generates the nervous force, and the instruments, the tubules, which serve to transmit its effects.

OF THE FIBROUS NERVOUS MATTER.—This forms by far the larger portion of the substance of the nervous system, constituting not only almost the entire mass of the nerves and the whole of the so-called medullary matter of the spinal cord and encephalon, but also a very considerable proportion of the gray substance in every situation—in the convolutions of the brain, in the laminæ of the cerebellum, in the interior masses, such as the striated bodies, thalami and so forth, in the axis of the spinal cord and in all the ganglions. We extract the following account of this structure, embodying all that is at present known respecting it, from the work quoted above :—

"*Of the Tubular Fibre.*—When a nerve-tube is perfectly recent, and unaffected by re-agents, it presents, if viewed by reflected light, a beautifully pearly lustre, and appears to be quite homogeneous. But if viewed by transmitted light, and with a sufficient magnifying power, a more complicated structure becomes visible in all the largest and best marked specimens. Most externally is the *tubular membrane*, an homogeneous, and probably elastic tissue of extreme delicacy, analogous to the sarcolemma of striped muscle, and, according to our observation, not presenting any such distinct, longitudinal, or oblique fibres in its composition as have been described by some writers. Within the edge of the tubular membrane, on each side, are seen two thicker and darker lines, which appear to mark the outer and inner limits of an inner layer of different composition and refracting power, and which is generally known as the *white substance of Schwann*. This forms a tube within the tubular membrane. Within the white substance of Schwann is a transparent material, occupying the axis of the nerve-tube. This has been called by Remak the *flattened Band*; but a better name for it is that of *axis cylinder*, employed by Rosenthal and Purkinje. It is evident, that the whole of the matter contained in the tubular membrane is extremely soft, for it is found to yield under very slight pressure, and may be readily made to pass from one part of the tube to another." P. 209.

The tubular fibres vary in diameter from $\frac{1}{1800}$ to even $\frac{1}{10000}$ of an inch, but the average is from $\frac{1}{2000}$ to $\frac{1}{4000}$ of an inch.

Dr. Todd and Mr. Bowman admit the existence of an independent gelatinous and *solid* nerve-fibre, found principally in the sympathetic system. As there is no point connected with the structural anatomy of the nervous system on which more contradictory opinions prevail, no apology will be required for laying before our readers the latest, and we may add the best account of this fibre :—

"*Of the Gelatinous Nerve-fibre.*—This term is applied by Henle to certain fibres found principally in the sympathetic nerve. They are flattened, soft, and homogeneous in appearance ; containing numerous cell-nuclei, some of which are round, others oval ; some situated in the centre of the fibre, others adhering to either edge ; their longest diameter being generally parallel to the longitudinal axis of the nerve. These nuclei are arranged at nearly equal distances, and frequently exhibit distinct nucleoli. Sometimes these fibres shew a disposition to split into very delicate fibrillæ. Acetic acid dissolves the fibre, leaving the nuclei unchanged. These fibres, containing nothing analogous to the white substance

of Schwann, are devoid of that whiteness which characterises the tubular fibre; and it would seem that the gray colour of certain nerves depends chiefly upon the presence of a large proportion of the gelatinous fibres. Hence they are sometimes called *gray fibres*. The mode of connexion of the gelatinous fibres with the elements of the nervous centres is, as yet, quite unknown. They are found in considerable numbers, in what are called the roots of the sympathetic, or the communications of that nerve with the spinal nerves; it has been supposed by Valentin that they are continuous with certain elements of the vesicular nervous matter.

"These fibres are smaller, in general, than the tubular fibres; their diameter ranges between the $\frac{1}{5000}$ and the $\frac{1}{1000}$ of an inch. They resemble very much the fibres of unstriped muscle." P. 212.

ORIGIN AND TERMINATION OF NERVES.—The exact relations of the central ends of the fibres on the one hand between themselves, and on the other with the grey vesicles or nucleated corpuscles, are not known. Allusion has been made above to the fibrous prolongations of the caudate vesicles, and further, it may be stated that the nerve-tubes are most intimately related to the nucleated corpuscles, adhering to and even indenting their sheaths; many of them also pass between these bodies, probably to form connexions with those which are more distant. It is conceived by Valentin that a looped disposition of the fibres takes place in the grey substance of the nervous centres; but Todd and Bowman state they have not been able to discover such an arrangement.

A just conception of the psychical phenomena, and especially of the relations existing between pure voluntary motion and the senses, would lead the physiologist to infer that no such connexion as that described by Valentin really exists, and for this simple reason, *that it is not wanted;* for it is certain, although the fact is not sufficiently kept in view, that there is no necessary connexion between voluntary motion and sensation. But in the case of the spinal cord all is reversed, for it is at length admitted on all hands that here impressions do pass, and necessarily, from the afferent to the efferent fibres, whatever these may be. It is our own fixed conclusion, not resting, however, on Stilling's dissections, but on what can be seen with the naked eye on carefully following the fibres of the anterior and posterior nerve-roots, that a part of their fibres unite in the gray substance; an opinion which, as will be presently shown, is supported by the dissections of Budge in the vertebrata, and by those of Newport in the case of the avertebrate animals.

Although the minute connexion of the two organic nervous elements are thus not precisely made out, it may, we think, be stated that, whatever these may be, *they are essentially uniform throughout the whole system*—in the convolutions of the brain, in the laminæ of the cerebellum, in the corpora striata, in the spinal cord and all the ganglia, whether spinal or sympathetic: this is the conclusion at which we had long since arrived, and recent research confirms its correctness.

As to the mode in which the nerve-tubes terminate, to use the conventional term still employed, it appears that it is always by *loops*, not by points or free ends; even in the olfactory, optic, and auditory nerves, where the latter disposition was formerly thought to obtain, the termination is by loops.

This point being established, it still remains to be determined whether the *end-loops*, as the German writers call them, are in all cases formed exclusively by tubes of a similar nature, that is, in one case of sentient fibrils, in another case of motor fibrils; or whether, in one and the same loop a sentient and a motor fibril run into or join one another. As this is a question of considerable importance in the investigation of the laws of innervation, it may not be superfluous to inquire, what light can be thrown upon it, either by inference or by direct anatomical observation. The only writer we are acquainted with who has fully entered upon the question is Valentin, who, in his earlier works, and again in his admirable *Lehrbuch der Physiologie*, has well illustrated the subject. He remarks, that if we assume, for the sake of argument, that "a sentient primitive fibril unites with a motor primitive fibril to form the loop, when the will is exerted to determine motion, it must happen (according to the laws of nervous conduction) that the stimulus descending in the centrifugal direction will cause the corresponding muscular fibres to contract, and will then stream back again, centripetally, and thereby produce a sensation," a condition of action which never takes place. "Thus the improbability of an occurrence like the one supposed, justifies us in rejecting such an hypothesis. But further, the anatomical disposition is also conclusive against such an arrangement: the existence of terminal loops in the retina, in the vestibule, and in the cochlea (and we may add in the papillæ of the skin), allows of no doubt that in these parts similar, that is sensible, fibrils alone unite. Again, there are numerous terminal plexuses and loops in very sensitive parts, which are yet incapable of any considerable motion; for example, however highly we may estimate the power of contractility in the fibres and vessels of the dental papillæ, still it can never be assumed that the one half of their nerves are subservient to this action, and only the other half to the production of sensation. (l. c. p. 595.) We may, from these and similar facts, safely conclude that, in the case of sentient nerves, the terminal loops are formed exclusively of sentient fibrils. With respect to the motor nerves the anatomical evidence is not so complete, for, although the nerves going to muscles consist principally of the motor class, yet without a single exception, but in very varying degrees, they receive some of the sentient order likewise. It may, however, be inferred, so far as analogy and the laws of innervation justify an inference, that here, as in the purely sentient organs, the individual loops are formed either entirely of motor or entirely of sentient fibrils.

The general conclusion then is, that, both as regards the central spinal and peripheral parts of the system, but more certainly in the latter than in the former case, the primitive fibrils form loops, so that, if the cerebrum be excluded, it may be said, in the language of Dr. Carpenter, that "it appears uncertain from the results of the most recent microscopical inquiries, whether the nervous fibres can be said to have any distinct *terminations*, either in the gray centres, or in the organs to which they are distributed."

COMPARATIVE ANATOMY.—In the lowest tribes of the animal kingdom, no satisfactory evidence of a nervous system has hitherto been discovered; but some of their actions appear to be of voluntary character, and as

consciousness cannot be conceived to exist without the agency of some form of brain or nerves, the circumstance of these having as yet escaped detection, cannot be regarded as a proof of their non-existence. It has been commonly supposed that, in the *Acrita*, the nervous system assumes a diffused or molecular form; but the mode in which this system operates seems to demand in all cases, as a necessary condition, the presence of an active centre and conducting fibres. The following passage from Dr. Carpenter's Physiology expresses what we have long urged as arguments against the more commonly received opinion:—

"Moreover, some of their actions appear to show a certain degree of *voluntary* power, and therefore of consciousness; being independent, so far as can be ascertained, of the operation of external stimuli. These phenomena, then, would lead us to suspect the existence of a nervous system in the beings which exhibit them; not, however, in a '*diffused*' condition, but in the form of connected filaments. For, what consentaneousness of action can be looked for in a being, whose nervous matter is incorporated in the state of isolated globules with its tissues? How should an impression made on one part be propagated by these to a distance? And how can that consciousness and will, which are *one* in each individual, exist in so many unconnected particles? If, then, we allow any sensibility, consciousness, and voluntary power, to the beings of this group of Acrita—to deny which would be in effect to exclude them from the Animal Kingdom—we must regard these faculties as associated with nervous filaments, of such delicacy as to elude our means of research. When the general softness of the textures, and the laxity of structure that characterises the nervous fibres, in the lowest animals in which they *can* be traced, are kept in view, little difficulty need be felt in accounting for their apparent absence." P. 97.

The study of the comparative anatomy of the nervous system, when conducted upon philosophic principles, affords, as in all other branches of organization, results of the highest interest. We are sorry that the impartial discharge of our duty will not allow us to speak in terms of commendation of the article upon this subject in the 25th part of that valuable work, the Cyclopædia of Anatomy and Physiology.

It does not appear to us that Mr. Anderson has been happy either in his descriptive details or in the physiological deductions; and especially we miss those important generalizations, regarding both structure and function, which the advanced state of neurological knowledge would equally justify and demand.

The object of Mr. Anderson "is to describe the anatomy of the nervous system in the different classes of animals as they rise upward in the scale;" and after noticing the nervous ring placed around the mouth of the echinodermata, the writer thus defines the principle of progressive development:—

"We may next ask what are the characteristics of an increase in development of the primary nervous ring just mentioned, as the fundamental form of every nervous system. They are precisely these: either that it is in itself more highly developed, or that it is multiplied and repeated several times. This we shall find illustrated in nature; the former in the Mollusca, the latter in the Articulata." P. 603.

In following out the details of this proposition, Mr. Anderson has confounded parts together, which are in reality perfectly distinct organs. In the common star-fish there is, as just stated, a ring, consisting of small

swellings usually regarded as ganglia, which correspond in number to the rays; of threads, or commissures, uniting them together; and of nerves or conductors. Such being the elementary parts, we may be assured that, when they are developed in the higher animals, however much altered in form, size, and position, they still retain their original endowments. But the writer, if we rightly apprehend his meaning regarding the "primary nervous ring," considers that the kind of open ring contained in each segment of the articulate animals, "formed of a ganglion and two semi-circular radiating nerves," is a repetition of the nervous ring of the asterias, thus confounding together nerves and commissures; whilst, in another place, speaking of the vertebrata, he says "the primary nervous rings of the preceding (invertebrate) classes have become ganglions, and their commissures have become primary nervous rings," thus again confusing, if we seize the author's meaning in this somewhat obscure passage, organs of a totally different character, namely, nerves and commissures. And we would here remark, that the existing knowledge relating to the nervous systems of the echinodermata, is not sufficiently accurate to serve as the basis for comparison with the component parts of the same system in higher animals; but it is particularly desirable to point out that, if, which is most probably the case, the nervous ring of the asterias represents at once the cerebrum and spinal cord, it is impossible to compare that structure with a single segment either of the brain or of the spinal cord. But if any comparison is to be made, it is quite certain that each ganglion of the articulata and each segment of the spinal cord of the vertebrata, correspond to the gangliform swelling of the asterias—that the longitudinal commissural fibres of the spinal cord (assuming that direction in obedience to the altered form of the animal) correspond to the circular commissural fibres of the radiata, and that the nerves issuing from the spinal ganglia represent the nerves which, in the star-fish, run into the arms. We have pointed to these errors, because, if the relations of the several organs existing in different classes are not truly interpreted, comparative anatomy, instead of elucidating and explaining, which in reality it does in an eminent degree, the true nature of the involved and complex structures of the higher vertebrata and man, will only mislead and confuse.

The successive development, as traced by Mr. Garner in mollusks is most instructive, and proves, in a manner not to be mistaken, that the theory which attributes an independent power to every ganglionic mass has a real foundation in Nature. Mr. Garner thus expresses his views, in the truth of which we generally coincide:—

"The arrangement of the nervous system in Conchifera is of the highest physiological interest. It affords a beautiful example of a complete analysis of the more complicated nervous system of the vertebrata. We have here an anterior pair of ganglia, from which filaments proceed to all parts of the body associated too with the ingestive faculty; they are connected with whatever degree of psychical endowment the animal possesses and form its censorium commune; they are the source of its voluntary actions. The respiratory organs likewise have their special centre in the branchial ganglion or ganglions, the development of which is always proportioned to that of the branchiæ. And there is a special centre provided for the locomotive organ, too, whose development is strictly in relation with its size and activity, and which is absent when that organ does not exist. And it must be observed that these special ganglia (respiratory and pedal,) although unconnected with each other, communicate with the œsophageal ganglia.

"Have we not here distinctly marked out the cerebrum (the centre of volition and sensation), the medulla oblongata (the respiratory centre), and the cerebellum (locomotive centre), as they occur in the higher vertebrata? And in the aggregate of the chords by which the œsophageal ganglia communicate with the pedal and branchial ones, do we not see the analogue of at least a portion of the spinal cord. that portion which consists of afferent and efferent nerves to and from the brain? The nervous system is distinctly adapted to the wants of the animals and their limited psychical endowment, and the same law prevails throughout the scale of animals. It is not the nervous system which develops the powers and instincts of the animal; on the contrary, these latter determine the development of the nervous system. This is well illustrated by a comparison of the oyster and the mussel. These mollusks differ only in a greater locomotive power belonging to the mussel, to effect which it possesses an organ called the foot; the oyster is devoid of such an organ. The mussel has an additional ganglion (the pedal) which the oyster has not, and this ganglion is not an isolated centre, but, like the branchial ganglion, is connected by distinct filaments with the anterior or cerebral ganglia." P. 604.

Mr. Newport's researches on the nervous and vascular systems of the Myriapoda and Arachnida, constitute one of the most important additions to this interesting branch of anatomy that has appeared during some years. We noticed in our last number the disposition of the blood-vessels, the great trunks of which, and especially in the scorpion, have every appearance of being formed upon the same principles as those of the vertebrata. The existence of aortic arches in these avertebrate families is full of interest to the inquirer into embryology and comparative anatomy.

The principle upon which the gangliated cord of the articulata, and therefore of the spinal cord, for there can be no doubt that these really are what Sir C. Bell pronounced them to be, corresponding organs, is highly instructive in relation to the laws which govern the nervous centres in all classes. It has long been known in a general way, that in the articulate type, the number of the spinal ganglia and of the pairs of nerves therefrom arising, is determined by the number of segments into which the body is divided; but the exact application of this rule is not so well understood as from its importance it deserves to be.

There are few classes in which this principle is better seen than in the *annelida*, and especially in the common lumbricus terrestris, in which, on close examination, a minute series of gangliform enlargements is seen, corresponding in number to the moveable segments into which the animal is divided. That each of these ganglia is a source of innervation, we ascertained some years ago by dividing several earth-worms, and observing, that as the rings of the caudal segment died and mortified day by day, (for it is a total fallacy to assert that the posterior part of these annelides, when cut off, becomes converted into a new and perfect creature, which, at the time we refer to, was a common opinion,) those which continued alive still retained the power, even till only two or three rings remained, of exciting motion when the skin was touched.

Mr. Newport has given other and instructive examples of this law. Thus he found, by carefully investigating the two great divisions of the Myriapoda—Chilopoda, and Chilognatha, that each of these segments, into which the body is divided, instead of being, as it appears, simple, is in reality double, and that each sub-segment contains its appropriate ganglion; a principle which also applies to the head, this being composed of

several segments, four or six in number, each having its pair of cephalic ganglia. In the julus terrestris the division is carried so far that there are no less than 96 ganglia in its elongated cord. In many instances this typical formation can only be detected, as in so many analogous cases, by watching the progress of development; thus, in the embryo of *Necrophlæophagus longicornis*, on bursting the shell, has four double encephalic ganglia, the centres of a corresponding number of segments. But, in some instances, as in polydesmidæ, the ganglia of the sub-segments remain through life distinct in the posterior part of the body, whilst in the anterior, and especially in those nearest the head, they have coalesced, a species of metamorphosis which is familiar to those who are acquainted with the transformations occurring in the chrysalis among insects, and in the higher or decapod crustaceans, as the astacus fluviatilis. Thus in Myriapoda the encephalon is formed by the aggregation of several separate (at least four) pairs of ganglia placed above the œsophagus; but the interpretation of the physiological signification of these masses, a point of much importance, is most difficult of attainment. Mr. Newport, indeed, who regards the first pair as the cerebral lobes, conceives that the second pair of ganglia, which furnish the optic nerves, as the first pair do those of the antennæ, constitute, as in insects, the organs of volition; but it is most doubtful if any such subdivision of the true organ of consciousness ever occurs, and we believe that the only explanation which will be found to harmonize with the results of comparative anatomy, is, that in every class of animals, invertebrate as well as vertebrate, the most anterior pair of cephalic ganglia is the essential and exclusive seat both of sensation and volition.

One of the principal objects of these researches is to prove that, in the Myriapoda, as in insects, there is a set of nerves anatomically and physiologically distinct from the ordinary nerves of volition and sensation, and which Mr. Newport calls, though not very appropriately, "the fibres of re-inforcement of the cord." They enter into the formation of all nerves which spring from the gangliated or spinal cord, and are observed to form the borders of these nerves, and the outer part or sides of the spinal cord between them; and thus it is conceived by this physiologist, that "every nerve arising from a ganglionic enlargement of the cord is composed of four sets of fibres; an upper and an under one, which communicate with the cephalic ganglia; a transverse or commissural, that communicate only with corresponding nerves on the opposite side of the body; and a lateral set, that communicate only with nerves from a ganglionic enlargement on the same side of the body, and form part of the cord between the roots of the nerves." It is conceived by Mr. Newport, that these last fibres constitute in reality an *excito-motory* system, independent of the *sensori-volitional;* and this view is supported by several experiments. Dr. Todd and Mr. Bowman do not agree in these deductions; and, among other objections, state that it would appear the above fibres merely pass from nerve to nerve without forming any junction with that which is doubtless the source of all the excito-motory power, the vesicular matter, namely, of the cord. It must be acknowledged that, neither in the description nor in the accompanying plates, is such a junction indicated by Mr. Newport; but we have distinctly seen, on examining aquatic larvæ, and especially those of some species of gnat, that the fibres of re-inforcement *do form a*

*connection with the granular matter of the ganglia*, and we think that what happens in the case of insects may be safely applied to that of the myriapoda. On the whole, this discovery of this additional set of nerves must be regarded as an important step gained towards the solution of that most difficult problem, the true anatomy of the spinal cord, and the mode and origin of the spinal nerves.

The observations of Dr. Will relate to the minute structure of the ganglions and to the origin of the nerves in avertebrate animals. His account of what should be regarded as the neuro-skeleton, in the crab and gasteropod mollusks, where it consists of a peculiar cellular membrane, is interesting when contrasted with the same structure in the myxinoid fishes, and especially in the amphioxus, in which remarkable animal it is equally of a membranous consistence; links like these, to which should be added the commencing cartilaginous cranium of the cephalopoda, serve to unite the vertebrate with the invertebrate classes, and so to obviate the seeming void by which it has been supposed they are separated. In fact, for ourselves, we have no hesitation in admitting, in all animals having a distinct nervous system, the two typical forms of skeleton expressed by the terms neural and dermal skeletons. In some classes, as insects, crustaceans, &c., the former is reduced to the membranous form, whilst the latter is much developed, consisting of a horny, pergamentaceous, or calcareous envelope; whilst in others, as the vertebrata, the neural skeleton is developed at the expense of the dermal, which re-appears, however, in many classes, as in the scales of fishes, especially of the ganoid type, in the saurian reptiles, and more palpably still in several among the existing and extinct edentata, as the armadillo and glyptodon. A minute account is given of the connection of the nerves, but which, after our notice of Mr. Newport's researches, need not detain us.

According to Dr. Todd and Mr. Bowman, although in all essential points the structural arrangement of the nerves and nervous centres of the invertebrate classes corresponds with that of the vertebrata, yet there are some differences, which are thus described:—

"In the lobster, the nerve-tubes are large; the tubular membrane has the same transparent, homogeneous appearance, which we have noticed in the vertebrata. But it incloses many delicate nuclei at various intervals. Within the tubular membrane there is a very thin layer of the white substance of Schwann. The nerve-tubes are very transparent, and are much larger than the average size in vertebrata. Respecting the existence or structure of the gelatinous fibres, we can offer no remark. In insects and myriapoda, the nerve-tubes vary considerably in size; they are collected into bundles, and are surrounded by a transparent sheath of homogeneous membrane, which accompanies the larger ramifications of the nerve-trunks. The white substance of Schwann is not so obvious nor so constant in these nerves as in those of the lobster, and the existence of nuclei makes them resemble closely the gelatinous fibres of the vertebrata. The anatomical characters of the vesicular nervous matter of invertebrata do not essentially differ from those of the same substance in the vertebrate classes, so far as our observation enables us to judge. The nerve-vesicles with nuclei and nucleoli are equally apparent in both, though in the former they are more transparent, and contain less pigment." P. 227.

A singular little fish, the Amphioxus Lanceolatus, has lately attracted the attention of naturalists, and of which a minute account has been published by Mr. John Goodsir. The vertebral formation is reduced to its

simplest condition, consisting of a chorda dorsalis formed externally of a fibrous sheath, and internally of an immense number of laminæ of the consistence of parchment, and representing so many individual vertebræ. The most extraordinary circumstance, however, is that, according to Mr. Goodsir, the animal has neither cranium nor brain, though Retzius admits the latter. The nervous system is thus described:—

"The spinal cord is situated on the upper surface of the chorda dorsalis, enclosed in the canal formed in the manner above described. When the whole length of this canal is displayed by removing the muscles, and then carefully opened, the spinal cord is seen lying in the interior, with nerves passing out from it on each side. It stretches along the whole length of the spine, is acuminated at both ends, and exhibits not the slightest trace of cerebral development."

"From fifty-five to sixty nerves pass off from each side of the cord; but, as the anterior and posterior vertebræ are very minute, and run into one another, and as the spinal cord itself almost disappears at the two extremities, it is impossible to ascertain the exact number, either of vertebræ or of spinal nerves. These nerves are not connected to the spinal marrow by double roots, but are inserted at once into its edges in the form of simple cords."

"When an entire animal is examined by transmitted light, and a sufficient magnifying power, the anterior extremity of the spinal cord is observed, as before mentioned, to terminate in a minute filament above the anterior extremity of the vertebral column. The first pair of nerves is excessively minute, and passes into the membraneous parts at the anterior superior angle of the mouth."

"One of the most remarkable peculiarities in the Lancelet is the absence of the brain. Retzius, indeed, describes the spinal marrow as terminating considerably behind the anterior extremity of the chorda dorsalis, in a brain which exhibits scarcely any dilatation; but careful examination of the dissection of my own specimen, which I have also submitted to the inspection of Dr. John Reid, and of other competent judges, has convinced me that the spinal cord, which may be traced with the greatest ease to within 1-16th of an inch of the extremity of the chorda dorsalis, does not dilate into a brain at all."

"The peculiarities in the structure of the spinal cord are not less remarkable than those of its configuration. It is difficult to understand, according to the received opinions on the subject, how a spinal cord destitute of primitive fibres or tubes, and composed altogether of isolated cells, arranged in a linear direction only towards the middle of the cord, can transmit influences in any given direction; and more especially how the tract of black or grey matter, if it exercises any peculiar function (excito-motory) communicates with the origin of the nerves. The nerves, also, are remarkable, originating in single roots, and containing in their composition one kind only of primitive fibres (cylindrical)." P. 618.

We must refer to the original paper in the Transactions of the Royal Society of Edinburgh, or to the copious extracts contained in Dr. Todd's Cyclopædia, for a more detailed account of this apparently anomalous member of the vertebrate family.

Dr. Budge, who is known as the author of several contributions to the nervous system, has communicated, in Müller's Archives for the last year, a very minute, and apparently correct account of the mode of origin of the spinal nerves in the frog.

After noticing the opinions of Gall, Keuffel, Bellingeri, Weber, and Valentin, all of whom admit the connexion between the roots of the nerves and the gray substance of the cord, Dr. Budge particularly criticises and opposes the views of Stilling and Wallach, according to whom all the fibre of the nerves pass transversely through the gray matter. The dissection of the lower extremity of the cord or *conus terminalis*, proves, according to

Budge, the interesting fact, that "many of its longitudinal fibres are the continuation of the roots of the nerves which enter the cone."

At the point of junction the fibres of the nerves experience a change of colour from blueish gray to yellowish gray, and also of size, for whilst their diameter equals $\frac{1}{250}$ of a line, the longitudinal fibres of the cone are only $\frac{1}{400}$ to $\frac{1}{800}$. He has followed many of the longitudinal fibres from their origin out of the nerves as far as to the anterior end of the conus, and from this into the longitudinal fibres of the spinal cord itself.

The examination of the nerves higher up, gives results to which we attribute much importance. If one of the roots, the dorsal for example, be traced, it is found to divide into two fasciculi; one of these, the more superficial, forms a slight curve, and then ascends towards the brain, forming, with similar fasciculi of other roots, the posterior column or strand of the spinal cord. Dr. Budge remarks, "it is certain that the above course of the fibres is natural and not artificially made by rupture and displacement arising from compression. If the above-named white band (the posterior column) be cut off with the nerve-root attached in a perfectly recent specimen, although some fibres are torn, many remain, and thus the entrance of an individual fibre of the nerve-root into a medullary tube of the spinal cord may be observed." We may remark that Valentin had already represented this connexion between the nerve-tubes and the varicose fibres of the cord. As regards the deeper-seated fasciculus, Dr. Budge found more difficulty in following the fibres; he ascertained, however, that they penetrate into the gray substance, and here, being spread out into three or four bundles, and separated by the ganglionic corpuscles, he concludes that they, like the more superficial ones, turn upwards towards the brain.

An examination of the plates accompanying this description induces us to believe that many of the last-named fibres terminate in the gray substance; the author, indeed, himself found a number of fibrils uniting the corpuscles of that substance together like bridges, and thinks some of them may be derived from the nerves. We may observe that the greatest care was taken to obviate error, and Dr. Budge particularly avoided the use of the compressorium, to which, by causing rupture and displacement of the fibres, he attributes what he considers to be the mistakes of Stilling respecting the transverse course of the nervous fibres within the cord. As we shall have occasion again to refer to these dissections, it will suffice to state here that they seem to establish two positions:—

1. That each root of the spinal nerve divides into two fasciculi.

2. That the fibres of one of these fasciculi become directly continuous with the white fibres of the cord; and the fibres of the other fasciculus with the gray substance of that body.

We shall conclude our present notice by a brief account of two remarkable forms of nervous organs—the peculiar nervous system of the Torpedo and the Pacinian Corpuscles. Appended to the highly important work of Matteucci on Electro-Physiological Phenomena, of which an account was given in the last Number of this Journal (see Medico-Chirurgical Review for April, p. 305), is a very interesting account of the nervous system and electrical organ of the torpedo by M. Paul Savi, a colleague of Matteucci. It is well known that this remarkable animal, of which, besides many others existing in the seas of warmer climates, there are three

species in the Mediterranean, has a large electrical organ situated on either side between the branchiæ and the heart. As our limits will not allow us to follow M. Savi into the details he has given respecting this most interesting apparatus, we must restrict our notice to the nervous structures by which it is supplied.

These consist of 1, a great branch of the 5th pair; 2, three very large branches of the 8th pair; 3, a small branch of the 8th. In order to understand the relations of these nervous cords to each other, it is requisite to describe shortly certain peculiar masses which are developed in the encephalon of the electric ray, in addition to the parts existing in the *raia batis* and other species. The cerebral masses consist of the cerebral hemispheres or first encephalic mass; of the two bodies which, according to Straus, correspond more particularly to the superior quadrigemina or nates; and of the third encephalic mass of Carus, or the cerebellum; of the medulla oblongata; and of two masses, each divisible into two lobes, which are called, the most anterior, *restiform laminæ* by Serres, whilst the two posterior are called by Savi the *electric lobes*. The two former, or restiform laminæ, constitute two peculiar lateral lobes to the cerebellum; they present a very decided convoluted disposition; consist of a process of white substance; are united by fibres to the electric lobe immediately to be described, and give origin to the principal part of the superior root of the 5th pair, which goes to be distributed almost entirely to the muciparous organs, which are greatly developed in the torpedo.

Savi says, "the most important part of the brain in this animal is unquestionably the medulla oblongata, on account of its presenting a development superior to that which it possesses in non-electric fishes; and, still more, because it is composed of certain lobes which have an intimate relation with the nerves of the electric organs. It has half the length of the entire encephalon, and is broader than any of other parts of the brain." The great peculiarity consists of two large oval masses, larger than any of the others, which entirely fill the rhomboidal sinus of the fourth ventricle, called by Savi, who considers them to represent the posterior pyramids of the medulla oblongata of other animals, the *electric lobes*. They were first noticed by Jacopi, and are thus described in his Elements of Physiology and Comparative Anatomy, published in 1810:—"behind the cerebellum, and precisely in the place where in other fishes the encephalon becomes continuous with the medulla oblongata, there is in the torpedo a swelling of gray substance, of which the volume is almost larger than that of the cerebellum and cerebral lobes together. It is from this swelling that arise on each side, three large nervous trunks (those of vagus) which are distributed, in great part, to the electrical organs." There are thus in the torpedo two distinct masses—the restiform appendages of the cerebellum and the electric lobes, which do not exist in common rays; a fact than which it is impossible to conceive anything more corroborative of the opinion now become prevalent, that the gray substance is the source of all power in the nervous system.

The account of the origin of the 5th and 8th nerves is interesting: that part of the former, the upper, already alluded to as being attached to the lateral mass of the cerebellum, does not actually arise there, but can be traced into the electric lobe, which also gives origin to the 8th, so that the

two nerves engaged in supplying the electric apparatus arise from the same mass, and that a body which is peculiar to the torpedo. M. Savi succeeded in tracing the vagus into the gray substance, and he concludes from his observations, that the elementary fibres of that nerve, as well as of the 5th, form loops within the electrical lobe; but he does not appear to have shown that the fibrils of the two nerves join together. In connection with this subject, we may state that Stilling and Wallach have traced the vagus to a nucleus of gray substance on the floor of the 4th ventricle in mammals.

The most original and important part of M. Savi's Memoir is that which relates to the minute structure of the electrical organ, and especially of its nerves. The first minute account of this curious apparatus was given by Hunter; he states that the columns forming are very numerous, varying according to the size of the animal; in one specimen 470 were counted. Each column is divided horizontally by a vast number of diaphragms into small cells, which contain a glairy fluid. M. Savi thinks each partition is composed of two very thin layers, and that, in fact, "each prism or column of the organ is formed of a great number of membranous cells superposed one upon the other, almost soldered as it were together, and enclosing between the faces which touch the sanguiferous vessels and the elementary nervous fibres." Some estimate of the complexity of this instrument may be formed from the fact stated by Hunter, that, in a column one inch long, there were as many as 150 septa.

The proper nerves of the apparatus are derived exclusively from four great branches of the vagus: the primary tubules present the double contour, and what is interesting, whilst the other and ordinary branches of the 8th, those of the stomach, and the one called by anatomists nervus lateralis, present gangliform enlargements, those going to the organ are entirely devoid of them. The nervous branches penetrate between the prisms, and then send off very minute twigs, in fact, primary tubules, into each diaphragm or septum, where, and apparently between the two layers above described, they form a very delicate network, the meshes being, although occasionally irregular, usually octagonal in figure. A high magnifying power and much care in the manipulation are required to display this distribution. The septa, as Hunter had already seen, are very vascular.

It is impossible in considering this interesting formation to overlook its marked resemblance to the galvanic battery, for, as Matteucci has experimentally ascertained, a very small portion of a prism gives an electrical discharge, corresponding to the size of the section, upon irritating its nervous filament: it is further certain that, like single pairs of plates, each portion can develop electricity. We may likewise remark, that Galvani obtained a feeble spark from the torpedo, and more lately M. Matteucci: Dr. Davy has also shown that needles may be rendered magnetic by the discharge.

M. Savi has discovered a very curious apparatus in the torpedo which is alike distinct from the electrical organ, and from those numerous muciparous follicles which all the rays and sharks possess; he calls it the '*follicular nervous apparatus*." It is found on the border of the mouth and 'nostrils, extending upon the periphery of the electric organs; and it con

sists of a vast number of follicles placed in rows, each composed of two membranes, and supported by a fibrous structure. Each follicle receives a twig of the peculiar branch of the fifth pair already mentioned, which, after forming a small swelling, enters the little sac, and then again leaves it diminished in size to unite with the filament of the adjoining follicle. The use of this remarkable and highly-organized apparatus, which was first described by M. Savi at the scientific meeting held at Florence in 1840, is not known: but as it is confined to the torpedo, and is supplied by a branch of the fifth, peculiar to these fishes, proceeding from the electrical lobe, of the medulla oblongata, there is great reason to conclude that this nervous follicular structure is in some manner or other connected with the development of the electrical power. The description given by M. Savi of the parts we have noticed, is accompanied by some beautifully executed and demonstrative engravings.

Pacinian Corpuscles.—These curious bodies are found in great numbers in connexion with the nerves of the hand and foot; more sparingly on other spinal nerves, and on the plexuses of the sympathetic, but never on the nerves of motion. They were discovered by Pacini in 1830; lately, Henle and Krölliker have given a very minute account of their anatomy, and they have again been examined by Dr. Todd and Mr. Bowman, and from their observations, which coincide with those of the German anatomists, the following details are extracted:—

"They always present a *proximal end*, attached to the nerve by a *stalk* of fibrous tissue, prolonged from the neurilemma, and occasionally $\frac{1}{10}$ of an inch long; and a *distal end*, lying free in the areolar tissue. The corpuscles in the human subject have an average length of from $\frac{1}{20}$ to $\frac{1}{10}$ of an inch.

"A minute examination of these singular bodies discloses an internal structure of a highly interesting kind. They consist, first, of a series of membranous capsules, from thirty to sixty or more in number, enclosed one within the other; and, secondly, of a single nervous fibre, of the tubular kind, enclosed in the stalk, and advancing to the central capsule, which it traverses from end to end.

"Ten or fifteen capsules may be observed to be in contact with one another, while the rest are separated by a clear space containing fluid."

"There are generally a few capillary blood-vessels ranging over the surface of the corpuscles; but the capsules are chiefly supplied by a minute artery that enters in the fibrous tissue of the stalk, sends off a few capillaries which perforate the tubular canal, and form each a short loop in the intercapsular spaces." P. 398.

The use of the Pacinian bodies is at present quite unknown; but it has been surmised that they may influence the contained nerve and thus those with which it is connected, or "the apparatus may be the special instrument of some peculiar vital agency, which the nervous filament is designed simply to bring into communication with the nervous system." This latter view corresponds with the comparison which Pacini had himself already made between the structure of these bodies and that of the electrical organs of the Torpedo.

In our next number we purpose to consider the works, the titles of which are appended to the present article, in reference to Human Anatomy and also to the Physiology of the Nervous System.

A PHYSIOLOGICAL ESSAY ON THE THYMUS GLAND. By *John Simon*, F.R.S., Fellow of the Royal College of Surgeons, Demonstrator of Anatomy in King's College, London, and Assistant Surgeon to the King's College Hospital. 4to. pp. 100. Renshaw, London, 1845.

WE learn from the Preface, that this is the Essay for which the triennial prize of £300, arising from a sum of money bequeathed by the late Sir Astley Cooper, was awarded to Mr. Simon by the Physicians and Surgeons of Guy's Hospital. We sincerely congratulate the author upon being the first person to carry off the prize munificently instituted by our great surgeon for the encouragement of original investigations in physiology and surgery. This endowment is really a handsome and substantial reward, completely eclipsing the Jacksonian Prize, the paltry amount of which (£10)* is barely sufficient to meet the expense of pen and paper. In one instance the successful author paid double the amount to an amanuensis for copying the essay, and ten times the sum has been expended on drawings to illustrate it. The inducements to prosecute arduous researches in anatomy and physiology are, in this country, few indeed. We may indulge a hope, therefore, that the liberal example of Sir Astley Cooper will be followed, and that those who have benefited largely by their profession, will evince the estimation in which they hold it, by encouraging their successors to devote their energies and abilities to the advancement of medical science. Let us not forget the words of Bacon:—"I hold every man a debtor to his profession; from the which as men of course do seek to receive countenance and profit, so ought they of duty to endeavour themselves to be a help and ornament thereunto."

The author commences in Chapter I. with a Historical Introduction, which is concise, and exhibits much careful research. He observes that, the existence of the Thymus gland was probably first noticed in the Museum of Alexandria. Rufus, the earliest compiler, whose works comprise the discoveries of that celebrated school, mentions it as having already obtained a Greek name. Hippocrates had previously omitted it in his enumeration of the glands, and Aristotle on several occasions had left it unmentioned. Galen and Julius Pollux are the next writers after Rufus who mention this gland: the latter dismisses it in few words; the former gives a more detailed account, and attributes to it the double office of defending the vena cava from the contact of the sternum, and of staying and supporting this large vessel with its branches. The same genuine physiologist was the first to notice the differences produced by age in the size of the gland. After briefly reviewing the progress of physiology and of structural anatomy during the sixteenth and seventeenth centuries, the author remarks:—

"Simultaneous with this general progress in structural anatomy—and indeed

* This amount has within the last few years been increased by the College of Surgeons to twenty guineas.

forming part of it—was a better knowledge of the Thymus gland. Blasius had dissected it in a variety of animals; Bartholin, Horstius, Harvey, Deusingius, de Graaf, Diemerbroeck, and Munnicke, had noticed its fluid contents: Wharton and his followers had recognized its true structure sufficiently to arrange it with the conglomerate glands, and to compare it especially with the pancreas and parotid; its arteries and veins had been traced with tolerable exactness, and its nerves and lymphatics described, though not always with strict fidelity.

"With these additions to positive knowledge, an immense number of crude hypotheses are presented to us, and these have so much extended themselves towards the present time, that it will be convenient in reviewing them to follow each particular theory through its later developments, and to consider in one connected view the statements of its early and more modern supporters." P. 6.

The following passage will be read with interest:—

"Glisson first originated an opinion which is interesting as being nearly the same as Sir Astley Cooper's;—quemadmodum mammæ lac infantulo foris præparant, sic Thymus liquorem nutritium intus suppeditaverit: Dr. Charleton adopted, a few years afterwards, the very words of this suggestion. The same views were taught by the celebrated Dionis in his demonstrations of Anatomy from 1673 to 1680, as also by St. Hilaire at the same period, and by Garengeot thirty years later. Puteus partially adopts the theory, and Ludovico Paliani quotes one of his colleagues as having just held a disputation (1758) concerning the Thymus, in which he maintained—'ei prædictam glandulam muneri inservire, ut ex integrâ sanguinis massâ substantiam quandam lacteam nutriendo fœtui necessariam secerneret.'

"From this time until the period of Sir Astley's work, the opinion seems to have been forgotten, and the terms in which he advances it lead me to believe that he was unconscious of agreement with the authorities just quoted. 'Is it not probable,' he asks, 'that the gland is designed to prepare a fluid, well fitted for the fœtal growth and nourishment, from the blood of the mother, before the birth of the fœtus, and consequently before chyle is formed from food; and this process continues for a short time after birth, the quantity of fluid secreted from the Thymus gradually declining as that of chylification becomes perfectly established?" P. 7.

If Sir Astley Cooper had been a better-informed anatomist, he might, in this instance, not only have done justice to his predecessors, but have saved himself some labour and fruitless speculation. It is unnecessary to follow our author closely in the account which he gives of the crude and often absurd theories which have been promulgated by different physiologists respecting the office of the Thymus gland. Among the speculations which refer it to the lymphatic system, occur the interesting researches of Hewson, and his discovery of the peculiar corpuscles which the gland contains:—

"While examining its fluid with a glass of $\frac{1}{13}$ inch focus, he perceived 'a great number of small, white, solid particles, exactly resembling in size and shape the central particles in the vesicles of the blood, or such as are found in the fluid of the lymphatic glands.' To these last he had previously attributed the destiny of becoming nuclei for the vesicles of the blood; and he now surmised that the Thymus might be considered as an appendage to the conglobate glands, and participate in their function of forming the nuclei. He considered the probability of this to be the greater, 'from observing that the Thymus exists during the early period of life only, when these particles seem to be most wanted;' and he 'found reason for suspecting, that the lymphatic vessels were possibly the excretory ducts of the Thymus.' After a long period of neglect, Hewson's general

theory of the relation of the lymph-corpuscles to the coloured particles of the blood, has received extraordinary confirmation, and almost universal acquiescence." P. 9.

That particular portion of it which concerns the Thymus seems to Mr. Simon, for many reasons, inadmissible; but it has lately obtained partial support from Bischoff, one of the most eminent German physiologists.

Among the most interesting and plausible hypotheses on our subject, must be accounted those which refer the activity of the Thymus to the quiescence of the lungs, and suppose that, more or less directly, it fulfils in fœtal life the latter functions of these organs, either in oxydizing or in decarbonating the blood. Our author remarks:—

"I shall have occasion hereafter to refer again to these views of the relation of the Thymus to the respiratory organs, and shall now merely observe that the arguments used against them by Becker and Haugsted are quite unanswerable; being founded on the fact that the chief development of the gland is not during the period of uterine life, nor the commencement of its decay simultaneous with birth; its activity, in other words, is *not* greatest during the quiescence of the lungs; although then, according to the opinions quoted, there would be the chief, or only, necessity for its decarbonizing action on the blood." P. 11.

The most important recent contributions to the general anatomy of the Thymus are to be traced in the monographs of Meckel, Lucæ, Haugsted and Cooper. Meckel carefully considers the circumstances which determine a greater size or longer persistence of the Thymus; investigates it especially in rodent and marine mammalia; notices for the first time, in certain birds, an organ which he believes to be analogous to that under consideration, and quotes numerous instances of disease affecting it in the human subject:—

"Lucæ's investigation of the Thymus was anatomical, and chiefly regarded its minute construction. He recognized its cells and their arrangement around the lobular cavity, and distinguished the former as secretory, the latter as receptacular; but he erroneously considered each cell as an acinus containing within itself a plexus of blood-vessels. Tiedemann more correctly explains the true relation of these anatomical elements: he describes each lobule as formed of many cells, round which a vascular network is expanded, and the cells as all communicating with the common cavity of the lobule.

"Sir Astley Cooper's work finally fixed this view of the structure of the gland as completely as could be done without the use of the microscope. By means of very fine and successful injections, he filled the minutest cavities of the organ, and displayed the relations of each to the common cavity of the whole." P. 14.

Sir Astley Cooper's anatomical conclusions are so well known that it is needless to quote them. In the same year with this work appeared the far different one of Dr. Haugsted. Mr. Simon states, "It is less remarkable for anatomical than for literary research, but in this respect is unrivalled; every author who has written on the subject is made tributary to its pages, and it is scarcely possible to improve on his selection as regards either the number or pertinence of the quotations; his criticism of the various opinions is likewise sound and perspicuous. To our knowledge of the anatomy of the gland he contributed little or nothing; in comparative anatomy he made several examinations, though not always with the happiest results. Perhaps the chief physiological merit in his work, is the prominence he

gives to the fact of the increase of the Thymus after birth; for, although Verheyen, Palfyn, and others, had cursorily noticed this circumstance, it had not obtained general attention; and men had continued arguing and inventing hypotheses for the Thymus as a fœtal organ, in ignorance of the essential error which must infect every theory so founded. Haugsted established, beyond the possibility of doubt, that the Thymus does not attain its greatest development, either absolute or proportional, until after a considerable interval from birth."

Our author observes:—

"With the two last-mentioned writers terminates the literature of our subject so far as concerns that elder school of anatomy, which contented itself with an almost exclusive study of relative position and outward form. To that school of descriptive anatomy we owe the greatest obligations. From the time of Galen to our own, it has been intimately connected with the progress and practical perfection of the healing art, and has included all the greatest masters of our profession: it has produced important physiological discoveries, has created our means of distinguishing disease, and laid the foundations of scientific medicine. It may at length be thought to have exhausted its materials, and fulfilled its task." P. 16.

Mr. Simon next gives a masterly sketch of the labours of the new school of structural anatomy, doing ample justice to the researches of Schwann, and acknowledging the merit of others, on the continent and in this country, who have successfully cultivated this branch of science. He observes, in conclusion, that no attempt has hitherto been made, amid the new school of physiology, to expound the structure or inquire the uses of the glands without ducts, in the cautious spirit of philosophical generalization. Yet there do seem to exist in the present day nearly all the elements so long wanted for resolving the problem which is the subject of the present essay: the means, on the one hand, for correctly interpreting the ultimate anatomy of organs; and, on the other, for correctly expressing the nature of their functions in the terms of chemical science. Under these advantages, we hope that we shall not be disappointed with the results of the difficult investigation undertaken by the author, and which have gained for him the Cooper prize.

The subject of the Second Chapter is the Development of the Thymus. The author very properly omits the details of the exterior anatomy—topics already fully exhausted—*the functions and intimate structure of the gland* being the peculiar subject-matter of his essay. The first appearance and early growth of the Thymus are points of much interest in its history. Mr. Simon's investigations have been chiefly conducted on the embryos of swine and oxen:—

"The earliest form, in which I have discovered it, has been that of a simple tube; lying, in the animals I have mentioned, along the carotid vessels, and surrounded by the faint indications of nascent areolar tissue. The contents of the tube are seen (with a magnifying power of 400 diameters) to be granular and dotted, but do not as yet shew distinct corpuscles. Its figure is defined by the abrupt outline of the membrane, which constitutes the wall,—an exquisitely delicate, transparent, homogeneous tunic, presenting at regular intervals slight elongated thickenings of its substance." P. 20.

Mr. Simon believes, for various reasons, that the first rudiments of the

gland would be found in a series of primordial cells, arranged in a line along the cervical vessels and pericardium, and coalescing on each side of the neck to form the tube he has described. This mode of origin would be in strict accordance with analogy, and would explain the peculiar thickenings which are found in the wall of the tube :—

"The second stage in the progress of development is in analogy with the mode of growth attributed to true glands : the tube bulges at certain points of its length, on one side or the other, and gives origin to diverticula or follicles, which maintain their connexion with its cavity. These follicles have precisely the same contexture as the parent tube, of which in fact they are mere evolutions ; they are bounded by the same delicate tissue as constitutes its wall ; they contain, too, the same material, in which may now be seen the peculiar dotted corpuscles hereafter to be described." P. 22.

The form of these growths from the tube " in the present stage, is that of larger or smaller segments of a circle ; sometimes projecting but little beyond the general line of the tube, sometimes exactly hemispherical, but always tending in their growth to become peninsular, and to retain their connexion with the main canal by means of a narrow isthmus of communication. Thus in the portions of the gland, where they are most thronged together, they may be seen in profile forming a series of flask-like appendages to the tube."

" The third distinct step of advancing development is made by the commencement of ramification in the follicles. This process usually begins when the follicle has attained the shape of three-fourths of a sphere, or somewhat later ; and occurs without any elongation of the isthmus connecting the follicle with the main canal ; so that these secondary and tertiary extensions of the cavity do not possess the tubular structure in so marked a degree, as the axis from which they spring." We shall not follow the author in his minute account of the formation of the follicles, as our readers would not comprehend it without the diagrams which illustrate the original. In concluding the description, he states : " By the extension of this process of follicular growth to all portions of the gland successively,—by the repetition on each new crop of follicles of the same acts of development and ramification,—and by the continued molecular increase which pervades the entire substance uniformly, as the means of interstitial growth, the Thymus attains the bulk and complexity of structure which distinguish it in the mature fœtus. There is no change whatever in the nature of the phænomena : the later steps are exact iterations of the first ; the type of development is established by the earliest bulging of the primary tube—by the first vesicle that buds from its side. That type essentially consists in the *lateral growth of branching diverticula from a central tubular axis*. And as the extremities of these diverticula, like the follicle whence they first sprang, tend always to assume the vesicular shape, and to represent large segments of spheres, the permanent structure of the gland, no less than its mode of development, may be named *tubulo-vesicular*."

We here find explained an error committed by Sir Astley Cooper in describing a cavity to which he gave the name of *reservoir*. This is attributed to an undue distention of the interior of the gland.

Mr. Simon justly assumes that the function of the Thymus must assu-

redly be most energetic at the time when its size is largest, and, having incontestibly proved, by facts adduced by Haugsted and himself, that the principal development of the gland is at a period considerably later than birth, he at once extinguishes all those theories which connect the uses of the organ with the peculiarities of fœtal organization and fœtal life. He gives a table of 64 experiments, exhibiting the weight of the Thymus in various animals and in the human subject at different periods, all of which strictly agree in their testimony to the increase of the Thymus after birth. The general and rough results of the examinations of the human subject seem to be the following:—

"First, During the period next succeeding birth, the activity of the Thymus is remarkable; it increases considerably in size, becomes turgid with secretion, and its specific gravity is lowered by the greater fluidity of its contents. The first growth is far out of ratio to the general increase of the body, but gradually subsides into a stage of less activity, which merely suffices to maintain the proportion so acquired.

"Secondly, During several months it continues to increase at a diminished rate, and merely in proportion to the general growth of the body; its further enlargement ceases about two years after birth.

"Thirdly, From this time, during a very variable number of years, it remains stationary; and, supposing the individual to be adequately nourished, gradually assumes the structure of fat. This stage, in which the bulk remains unaltered, but the texture changes so curiously, extends perhaps in the largest number of healthy individuals to the 8th, 9th, 10th, 11th or even 12th year of life; but it cannot be restricted even to these loose limits, for some years later the gland will often appear to have undergone no diminution in size. The intimate nature of its interesting structural change will be explained in connexion with the general morphology of the gland.

"Fourthly, The duration of its decay, and the epoch of its entire vanishing, are still more uncertain. About puberty it seems, in most cases, to suffer its chief loss of substance, and to be reduced to a vestigiary form; but still for many years its flat and emaciated lobes may often be dissected from the pericardium, and shown as a connected body. Distinct remnants of the gland may generally be exhibited in subjects of from twenty to twenty-five years of age; but beyond the latter time it is unusual to distinguish any positive traces of its existence amid the areolar tissue of the mediastinum. There are exceptions to this rule. I have sometimes discerned faint remnants of its form in subjects up to thirty years old; and Meckel and Haugsted quote various instances of its alleged persistence to a much later period. In several of these last-mentioned cases the gland was evidently the seat of the disease; and in others its abnormal continuance seemed associated with other morbid affections, chiefly of the respiratory organs; such irregularities need not interfere with our calculation of the usual date of its disappearance." P. 32.

In Chapter III. the author considers the Mature Structure of the Gland and Nature of its Secretion. Its structure presents for consideration the following particulars:—First, The arrangement of its cavity; secondly, the texture of the walls of that cavity; thirdly, the nature of its contents; fourthly, its means of vascular and nervous organization.

In closely examining the surface of the Thymus, after the removal of all vessels and areolar tissue, we observe that it is divided into a vast number of apparently distinct portions, measuring in diameter from half a line to almost two lines. These minute parts are recognized as membranous

cavities, and are the terminal vesicles of the gland: on dissection, it is possible, without disturbing any natural union of parts, to resolve the structure of the gland into masses ranged round an axis. "Each mass constitutes a sort of cone of glandular substance;—its apex pointing to the axis, or mesial line, of the gland; its base directed to the surface, where it presents its innumerable vesicles; while its intermediate part contains those successive branchings of the follicle, which terminate superficially in the vesicular form."

Mr. Simon describes the texture of the walls of the cavity as a material of the most exquisite delicacy, and as not exceeding $\frac{1}{1000}$ of an inch in diameter. It is transparent and quite homogeneous. A close capillary network furnishing the materials for secretion, lies in intimate contact with its outer surface, and is adapted to its various irregular inflexions:—

"This exquisitely attenuated, but tough and elastic, membrane is the only proper wall of the glandular cavities. It is strengthened on its exterior surface by an expansion of areolar tissue, which penetrates into every interval, and invests every part of the organ. This is of extreme fineness where it clothes the vesicles and can only be adequately examined by the aid of the microscope. Intermixed with it may be seen a small proportion of elastic tissue, in the form of very delicate straight fibrillæ crossing the surface of the vesicles in various directions, so as to form a network with wide meshes. It is probably these fibrillæ that Dr. Pappenheim has mistaken for organic nervous fibres." P. 35.

The contents of the cavities of the Thymus consist of a fluid, in which (as Hewson discovered) an immense multitude of microscopical corpuscles float. These corpuscles are found to be circular discs of nearly the same size as the coloured particles of the blood. They are generally flat and circular, but a large number may be found in every examination deviating more or less from the discord shape, and tending to become globular, or to assume irregular outlines. They have certain characteristic markings of their substance in the form of a variable number of minute dottings. These are supposed to be the minutest molecules of fat in combination with the solid albumen or fibrin, which constitutes the bulk of the corpuscle.

The following is an analysis of the Thymus, given by Mr. Simon, it being impossible to obtain the secretion apart from the secretory structure:—

"*Analysis of Thymus of Calf about three months old.*

| | |
|---|---|
| Water .. .. .. .. .. .. | 77·20 |
| Fibrin, gelatinous tissue, and traces of fat .. | 12·72 |
| A substance between Albumen and Casein .. | 4·13 |
| Watery extract .. .. .. .. .. | 3·80 |
| Salts, principally phosphates of Soda and Lime | 2·15 |
| | 100·00" |

The results of this examination, and of those of Sir A. Cooper's and Morin's, agree in a particular of extreme importance; they conclusively demonstrate, that no theory for the use of the Thymus can be just, which involves the supposition of its secreting and containing highly carbonated matters, through the period of uterine life:—

"Tiedemann, Arnold, and other almost equally great authorities, have argued

that the activity of the Thymus is in inverse proportion to that of the lung, and that, during the quiescence of this organ, it effects for the embryo a kind of vicarious respiration by separating a carbonaceous product from the blood. Chemical analysis suffices to display the instability of this hypothesis; it shows that the Thymus, in the period of its highest activity, instead of being surcharged with carbon, in reality contains no more of that element, than may be found in blood or muscle.*" P. 36.

Mr. Simon states that the actual and ultimate nature of the secretion of the Thymus is expressed, as nearly as may be, by the formula of Protein; in other words, it is identical with the common material of organic nourishment. And perhaps the greatest positive service, which chemistry can render to the present investigation, is thus to shew us that we may securely dispense with the special phrases of the laboratory, and may venture, in general physiological language, to describe the *secretion of the Thymus gland in the young animal as* NUTRIENT MATTER.

After mentioning the general courses of the arteries and veins, Mr. Simon describes the nature of their capillary terminations. These he has frequently injected; and so abundant is their distribution, that, in a case of successful injection, the whole organ is deeply coloured with the material employed:—

"A specimen of this kind, examined under the microscope, shows the injected capillary network to be of the completest description. It is so arranged as to include each individual vesicle within a vascular capsule; the capillaries are closely applied upon the transparent texture (*limitary membrane*,) which bounds the cavities, and so exceedingly dense is their network, that the meshes are of even less diameter than the vessels themselves. Every portion of the glandular substance is thus exposed in the completest manner, and at every point of its surface, to the penetration of the fluid ingredients of the blood." P. 38.

The author is unable to offer any satisfactory account of the real arrangement of the lymphatics. He argues that they do not fulfil the office of carrying off the secretion in the manner of excretory ducts; that here, as elsewhere, they serve only to appropriate and convey, in their own mysterious manner, certain interstitial superfluities of the nutritive process. The nervous supply of the gland is mainly derived from the plexus, which surrounds the first part of the subclavian artery, and which has its chief origin from the *inferior and middle cervical ganglia*. A second source of supply is the cardiac branch of the *pneumogastric*, which gives on each side a minute filament to the superior part of the gland.

In Chapter IV., the author treats of the Comparative Anatomy of the Thymus. He states that he has devoted great labour to this subject, and has been fortunate in obtaining the means of dissecting many rare animals.

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* As may be seen in comparing the subjoined ultimate analyses of the organic portions of blood, muscle, and thymus, viz.—

| | Flesh. | Blood. | Thymus. |
|---|---|---|---|
| Carbon .. .. | 54·12 | 54·20 | 54·02 |
| Hydrogen .. | 7·69 | 7·65 | 8·12 |
| Nitrogen .. | 15·67 | 15·73 | 13·42 |
| Oxygen .. .. | 22·32 | 22·12 | 24·44 |

The general results of his dissections may be stated as the discovery, that *the Thymus gland belongs, without exception, to all animals breathing by lungs, and to no others.* We regret that we cannot find space to accompany our author in the admirable account which he has given of his numerous and various dissections. His descriptions are concise and perspicuous, and abundantly illustrated by well-executed wood-cuts. This important section of his subject will be read and studied by all physiologists and comparative anatomists. He completely overturns the prevailing doctrine that the Thymus is an organ strictly limited to the class of mammalia, and peculiarly adapted to their organization and mode of life. We can only quote the chief results of this comparative investigation:—

"1. The *presence of the gland* is co-extensive with pulmonary respiration. 2. Its *shape and position* are variable and unimportant. 3. Its *size and duration* are, generally speaking, in proportion to the habitual or periodical inactivity of the animal. 4. Where it remains as a persistent organ, it is usually but one of several means for the accumulation of nutritive material; its continuance, under such circumstances, is generally accompanied—though, in some instances, superseded—by a peculiar accessory contrivance, the *fat-body*." P. 64.

In Chapter V. the author treats of the Morphology of the Thymus. This gland has long been associated in anatomical teaching with certain other bodies of equally obscure function; namely, with the spleen, the supra-renal capsules, and the thyroid body. We may naturally inquire, whether this classification has been made in the light of ostensible affinities; whether the several members of the order so constituted are actually bound together by physiological relationship, or merely dwell side by side as joint tenants of a common obscurity. After alluding to the opinion of Henle, who adopts the latter belief, Mr. Simon states that the results of his inquiries enable him "to affirm with confidence, that they do constitute a strictly natural family; that, in all the elements of their composition, they admit of detailed comparison with the so-called *true glands* of the body, forming a series parallel with theirs; and that the title of *glands without ducts*, for a long while vaguely applied to them, rightly expresses these homological relations."

Before advancing to the consideration of what is peculiar to the Thymus, he proceeds to demonstrate the characteristics of the class to which it belongs; and while justifying the constitution of this gland, he endeavours to illustrate the points of similarity and of difference, by which the organs included in it are related to the true glands; the points, in short, by virtue of which the function of these bodies may be considered as forming part of the general problem of secretion. After alluding to the well-known view of Müller as to the nature of a gland, and to the researches of Purkinje, Valentin, Henle, and Schwann, on its essential anatomy and organic means of secretion, Mr. Simon gives his own views on this difficult subject:—

"The organic means for secretion, as illustrated in the anatomical structure of true glands, may be stated to consist in an arrangement for the growth of deciduous cells, in close relation with blood-vessels on the one hand, and with an evacuant channel on the other.

"All the chief acts of the vital economy are carried on by the medium and

instrumentality of cells: in evidence of which fact it will be sufficient to cite the process of growth in its various modifications,—whether as seen in the development of the embryo, or in the repairing of injured textures, or in the organization of morbid products. Further, by the proportion in which these microscopical elements (or their rudiments, or their reliques) are present, we are enabled to measure the functional activity of any particular organ; their plenteousness and constancy are direct indications of abundant organic change—of life active in the part."

"In examining under the microscope a thin section of any one of the true glands, we find its bulk mainly consisting of cells, or their rudiments, in the closest possible aggregation; nowhere in the adult body do we find greater evidence of nutritive activity than in such a specimen; it is as obviously a growing structure as if it had formed part of an embryo. And when, after contemplating the important functions discharged by cells in other organs of the body, we turn to consider the use and object of their extreme preponderance in glandular structure, we are impelled to believe their essential connexion with the processes here effected. Every analogy leads us to anticipate that here, as elsewhere, they should be the media of organic change,—that their growth should inseparably identify itself with the manifestation of whatsoever specific materials it may be the function of their particular gland to eliminate from the system." P. 67.

The preceding observations are illustrated by a few unquestionable examples. They are so interesting, that, notwithstanding the length to which our review has extended, we cannot forbear quoting them:—

"In the liver, it is quite certain that the bile is for a period contained within the cavity of the cells. Henle, in confirmation of Hallmann's observation, states that he has seen these corpuscles of a yellowish tint, and ascribes that hue to the colouring matter of their secretion. But the natural appearance of the liver-cell is liable to certain exaggerations, which, though they originate in disease, are yet serviceable additions to the knowledge derived from healthy structure. For instance: the frequency of enlargement of the liver in cases of pulmonary disease, and its disposition to compensate for defective function at the lung by increased activity of its own secretion, had long been known; Louis had directed attention to the remarkable number of instances in which its fatty degeneration is found coincident with phthisis; and it was a natural step in pathological reasoning to suppose,—as the two organs have a certain analogy of chemical action,—that this morbid development of fat in the liver might have reference to the superabundance of carbon in the system, which the diseased lung could no longer eliminate,—that it might be a sort of vicarious action. It is now known that the actual seat of this fatty deposit is within the cells of the gland, that there is in each cell a morbid increase of the oily matter, which it should naturally contain; and it is argued, with great probability, that these minute elements, so surcharged with their compound of carbon, are but the ordinary channels of health, and that the fat is but an exaggerated secretion of the gland, here surprised in its very transit from the system.

"Still more conclusive is the evidence furnished by the following fact, as it relates to changes which have a merely mechanical origin. In cirrhosis, the essential primary disease is an inflammatory action, under the influence of which a quantity of coagulable lymph is poured into the interstices of the vessels and ducts; and, as this product of inflammation becomes organized, it contracts very closely, and surrounds with a dense capsule various isolated portions of the hepatic substance, or forms tough septa and constrictions within the liver and on its surface. By the condensation of this adventitious material, and by its pressure on the normal elements of the gland, there are produced various secondary results, which depend on mechanical obstruction; for example, partial atrophy of some spots with apparent hypertrophy of others; or again, jaundice, or ascites.

Under these circumstances (probably where the strangulation has especially told on some small duct, and has obstructed or obliterated it) we find certain circumscribed masses of the gland coloured with the deepest yellow, from intense biliary congestion. These parts will invariably present the microscopic appearance to which I wish to refer; namely the ultimate cells are identified as the seat of this deep ochrous colouring,—they are gorged with bile. And, as this phenomenon cannot be ascribed to the physical cause of imbibition, (for it always prevails first and chiefly in the interior of the cell, and about its nucleus,) there appears no other possible explanation of its occurrence, than the theory here defended,—that the secretions of glands first manifest themselves in connexion with cells, or with their germs,—that the secretory process in glands is one with the cell-growth of their parenchyma.

"In certain other glands I have likewise discovered a circumstance, which appears even more conclusive than that last mentioned, as to the point in question; viz., the occurrence within a nucleated cell-membrane of solid saline materials, corresponding to those of the secretion. In the urine of fishes, for example, and in the thyroid secretion of many animals, microscopical crystals frequently occur in considerable quantities; and, even where the crystalline form is incomplete, the same peculiar product may be recognized by its dioptric qualities, as its minute masses float in the fluid. In several instances while examining the kidneys or thyroid gland with the microscope, I have noticed that certain of the cells (unquestionable cells, with complete membranes and distinct dotted nuclei) have been distinguished from those in their vicinity, by the fact of their contents possessing the same refractive properties as the floating particles of the secretion; often, too, I have succeeded in distinctly recognising a crystalline arrangement in these inorganic contents of a cell." P. 69.

Mr. Simon remarks, that there are many reasons for believing that the so-called nucleus, or *cytoblast*, of a cell, is its essential part, and capable by itself of fulfilling the entire functions which have been generally ascribed to the wall of the complete cell; and it is highly important for the physiological understanding of the glands without ducts, that the grounds of this belief should be examined:—

"It appears that in the development of secretory cells, there are the following steps: First, the formation of the nuclei; Secondly, the deposition of material around them; which step seems the first evidence of their peculiar function; Thirdly, the isolation of this material by the growth of a membrane about it,—in other words, the completion of a cell, which has now all its elements—nucleus, membrane, and contents; Fourthly, a stage of apparent quiescence, during which the specific contents of the cell are probably either increased in quantity, or brought to greater concentration; a stage, in one word, of ripening: Fifthly, the falling of the cell with its contained material, in the form of excretion.

"Now, in certain cases (and these bring us very near to the habitual state of the glands without ducts,) it seems that the third stage of this process is absent, that no cell-membrane is formed, that the nucleus, with the material developed round it, constitutes the sole physical evidence of activity in the part. Indeed, in all glands this stage appears far less complete than in other organs of the body; in most it seems an exception, rather than the rule, to find the cell-membrane perfectly and definitely formed; the liver is the chief—if not the only—instance to the contrary. Moreover, where we are able to trace the products of secretion actually within a cell (as in the above-quoted instance of cirrhosis of the liver) we find them either exclusively, or at least with a very marked predominance, accumulated in that portion which corresponds to the nucleus: as though this corpuscle were the true centre of attraction, and the cell-membrane only the boundary, or passive recipient, of the matter to be excreted.

"These considerations and—still more forcibly—various illustrations which may be gathered from the history of the suppurative process and from other pathological phenomena, lead us to the following conclusions: viz. (1) that the cell-membrane—whether perhaps it exert any specific vital influence on the matter with which it has contact, or merely serve for the mechanical isolation of its contents—must be viewed, at least in the secretory process, as a secondary and inessential formation: (2) that its existence, in nutrition generally, bears relation to the rate and perfectness of the cell-growth, and to the permanence of the organic combination effected in that process; that it will not occur where the particular nutritive act is ill-supported by the economy, where it is either absolutely or proportionally accelerated, or where (as in instances presently to be specified) the peculiar functions which have their centre in the nucleus, are exerted for a short time only, and for temporary purposes: (3) that (in respect of secreting organs particularly) the nucleus—from its constancy, from the priority of its formation, and from the peculiar arrangement which the secreted matters assume in reference to it—must be considered as the characteristic and essential part of the apparatus, not requiring the completion of a cell in order to the performance of its functions; and (4,) that the act of secretion, though essentially homologous with ordinary molecular nutrition, is peculiarly prone, in various cases and for various reasons, to exhibit its process of cell-growth in a low, and as it were, aborted form.

"When I state that this lower condition of cell-development is the one usually manifested in the structure of the glands without ducts, and especially in the Thymus, it will not, I trust, be thought that I have wandered from the proper limits of my subject in the foregoing argument; the application of which will follow presently." P. 70.

We have felt at a loss to abridge the preceding particulars, so as to give a clear and connected view of the results of Mr. Simon's researches. He next traces the presence and arrangement of another, nearly universal tissue:—

"If we examine, with a magnifying power of 300-400 diameters, the structure of a true gland, e. g., of the pancreas or kidney, we find that its assimilating cells are included within a simple continuous tunic; and, as we extend our inquiry, we learn that varieties in the arrangement of this membrane determine the several shapes affected in the ultimate structure of glands. Thus, whether we examine the botryoid vesicles of the salivary glands, the bulging tubules of the stomach, the simple follicles of the intestine, or the long windings and uniform calibre of the urinary and spermatic canals, we observe the outline of each various form to be marked and limited by the homogeneous membrane referred to.

"It is not peculiar to the true glands, but belongs equally to those without ducts; although it has been almost overlooked in their structure, and never correctly described. Nor is it even distinctive of the generic anatomy of glands: for a tissue identical with it is seen bounding the fasciculi of voluntary muscle, and the tubules of the nervous substance, as likewise occurring in various other situations. In the mucous and vascular systems it has been named *tunica propria*, or *basement tissue;* in the structure of muscle, *sarcolemma;* in that of nerves, *tubular membrane* or *neurilemma;* but, in each case, its anatomical relations are the same; it is, in each, the *barrier between nutrient vessels and the products of nutrition*,—a barrier that serves to support and to circumscribe the latter, but yet affords ready transit to the materials of constant renovation supplied by the former. Its functions and physical characters are strictly identical in all its various positions, whether it be seen as the single tunic of a capillary blood-vessel, or as bounding the ultimate structure of muscle, nerve, or gland; I have therefore ventured to apply to it a name which suits it equally in all these

relations, and have, throughout this essay, spoken of it as the LIMITARY MEMBRANE.

"It extends, with more or less development, into every organ with deciduous cells, and constitutes in all (with certain rare but striking exceptions) a definite, but permeable, wall between the capillary blood-vessels on the one hand, and the assimilative cells, or cytoblasts, on the other. On its one surface, is the slow and equable circulation of blood through the finest net-work of capillaries; on its other, there advances the constant function of cell-growth, as I have above described it; while, intermediately, its own delicate tissue imbibes and is traversed by the liquor sanguinis, furnishing materials for the secretory process." P. 72.

In order to corroborate his theory of the use of the *limitary membrane* being merely mechanical, Mr. Simon refers to three remarkable instances of its absence, viz., in the liver and kidney amongst the true glands, and in the spleen, amongst the corresponding group of glands without ducts, and he endeavours to show that, in each instance cited, its absence appears to depend on some peculiar necessity in the organ, requiring that the access of liquor sanguinis to the glandular cells should be facilitated in the extremest degree. The opinion thus advanced is further strengthened by illustrations drawn from comparative anatomy.

In reference to the vascular organization of the true glands, it is remarked, that the larger arteries and veins follow no common law. That which is essential to function seems rather to be contingent on the nature of their ultimate, capillary distribution. In examining this we invariably find it to be such as may most effectively and uniformly diffuse the materials of nutrition amid the characteristic structures of the organ: it is a net-work of the extremest delicacy and closest woof, cast round about the ultimate tissues of the gland, and divided by the limitary membrane alone from the cells or cytoblasts which it serves to nourish. Since the "capillary blood-vessels are composed but of the thinnest homogeneous tissue, it is clear that their walls must be saturated, and freely and perpetually permeated by the fluid parts of the circulating blood; and since the same physical property of imbibition is possessed likewise by the limitary membrane, which divides the vascular network in question from the peculiar cells of the glandular parenchyma, we may justly consider that these last lie in an atmosphere of liquor sanguinis, and are developed in it, as their blastema." We regret that we are unable for want of space to follow our author in the further development of his views on the process of secretion and of the cell-theory. The following remarks, however, towards the conclusion, made in the true spirit of a philosophical inquirer, are so admirably expressed, that we cannot deny ourselves the pleasure of quoting them:—

"In arriving at this point—the specific nutrition of gland-cells—we are as far as mere Anatomy, or *Statical Physiology*, can conduct us; yet how distant still from understanding the actual nature, the actual mystery, of the process! Doubtlessly it is a great generalisation—one that fills the mind of the physiologist with a sense of beautiful harmony—to find, as has been found, that the nutritive and secretory processes are essentially one; their organic instruments alike; their traceable steps parallel. But let not this brilliant discovery be misunderstood, or misapplied; the law developed in it is morphetical, and this merely. Whether we are occupied with the large, or with the little; whether we collect the flowing secretions from divided ureters and gall-ducts, or—armed with all

optical resources, and standing on the very confines of the visible world—view the first molecules of bile and of the lithates, as they gather in their respective cells; equally in either case the pursuit is mere anatomy; equally in either case we are in the domain of form and phenomenon, not in that of power and law. With respect to secretion, the microscope has only shown us in ultimate detail what for ages had been known in its broader features; it has but revealed of the molecules that which was known of the masses. Physiological difficulties are not contingent on size: 'Why does the liver-cell contain oil-globules and yellow matter, rather than urea and the lithates?' is a riddle involving the same speculations and requiring the same answer, as that plainer question of our forefathers, 'Why does the liver secrete bile rather than urine?' For the solution of these doubts, it is in vain that we scrutinize the lifeless molecules and mechanism of the dissected body. The glands are too essentially alike for us to venture on ascribing to their fancied diversities of affinity and filtration the manifoldness of their several products." Page 77.

Having endeavoured clearly to set forth the essential anatomy of true glands, Mr. Simon, in pursuance of his scheme, proceeds to apply the standard of comparison so obtained to the interpretation of the structure and functions of the Thymus. The special distinction of the *glands without ducts*, is found (as their name implies) in the circumstance of their lacking an apparatus of excretion; while their generic affinity to the true glands consists in their possession of all the organic means for secreting—though only into their own closed cavities. Mr. Simon next analyses these means for secretion, in the same order as was adopted in describing the true glands. He describes the cells as "discoid, and of about the size of blood-corpuscles (in the spleen and supra-renal capsules somewhat larger, in the thyroid and Thymus rather smaller), but possessing less thickness. They have the general appearance and physical properties of those dotted discs which we encounter, as the nuclei of cells, in true glands and other structures of the body; and they are, as I shall show beyond doubt, identical with them in function." An account is then given of their differential characters in the thyroid body, supra-renal glands, spleen, and Thymus. The *limitary membrane* admits of demonstration in the glands without ducts, co-extensively with its existence in the true glands. The author gives a particular description of it in the thyroid body, and supra-renal glands, and notices its absence in the *Malpighian bodies of the spleen*, which is explained in a very interesting manner:—

"In approaching the limitary tissue of the *Thymus*, the reader will anticipate my statement, that this it is which we have already noticed on several occasions. He will identify it with that simple diaphonous membrane, which, in early embryonic life, formed the primary tube of the nascent gland; he will remember how, by bulging and branching, it formed a ramified follicular system; and how it has been seen to constitute in the mature organ the exact boundary of the parenchyma." Page 82.

The *ultimate vascular organization* of the glands without ducts is the same as that of the true glands; it consists in the distribution of a perfect capillary network around the assimilative elements. In the Thymus, the distribution of the plexus around the terminal vesicles is such, that it could hardly be distinguished from the secretory network of the pancreas.

The author subjoins a series of propositions as general results of the arguments on the subject of secretion:—

"1. The *phenomenon of secretion* essentially consists in the manifestation of particular products around organic centres or nuclei, which develop themselves in the effused plasma of the blood, and which, from their actual or potential relation to cells, are called cytoblasts.

"2. The *cytoblasts* bear no varying relation to the nature of the particular secretion, but are in all instances of substantially the same composition as the liquor sanguinis from which they are engendered, and of which they may be considered a mere solidification.

"3. The *materials of secretion*, if solid, arrange themselves in almost impalpable molecules around the several cytoblasts; if fluid they constitute a common medium in which the cytoblasts float.

"4. The *completion of a cell*, for the isolation of so much of the secreted product as is collected round each cytoblast, is a very frequent secondary process. In the true glands it is very frequent; in those without ducts exceptional. The steps of its development, and the circumstances regulating its existence, may be illustrated seriatim: viz.—

"α. In the Malpighian glandules of the spleen,—where the secretion is fluid and can but rarely be detected by the microscope in a molecular form, where the nutrition fluctuates from hour to hour, and where the assimilative affinities are therefore exerted with equal intensity only for the shortest periods,—a cell rarely, if ever, exists.

"β. In the Thymus,—where also during infancy, the secretion is fluid, and where (as I shall presently further illustrate) the assimilative acts probably vary in intensity over short and frequent periods, the persistence of cytoblasts without cells seems at first sight equally regular. And such is actually the case during the time of the gland's most active function; but when it becomes comparatively quiescent, or when (as in many reptiles and some mammalia) it assumes the characters of a permanent organ, it will be found that its cytoblasts have undergone their complete development, and become nuclei of the fat-cells which are formed within the limitary membrane.

"γ. In the tubes of the supra-renal glands, where the product is solid, there is constant opportunity of observing that transitional stage, in which the secreted matters are closely aggregated in a molecular form around the several cytoblasts; here, too, the completion of a cell is frequent.

"δ. In the vesicles of the thyroid gland, owing to the fluidity of the secretion, no intermediate stage of cell-growth can be seen; but cells, taking the characteristic cytoblasts of the organ for their nuclei, are often developed, and may be seen to contain a fluid of the same nature as that wherein they float.

"ε. Where the secretion of mucous surfaces is hurried by irritation, the bulk of it is found to consist of floating cytoblasts, which would else have been nuclei of epithelial cells; and the suppurative process, which is a similar abortion of cell-growth, indicates the operation of like influences in its origin.

"ζ. In the true glands, the formation of a complete cell is at once recognized as the regular type for secretory nutrition: The exceptions are very frequent, yet they admit of ready explanation on principles here stated; they are fallings short of the mature process, by the omission only of that which is inessential; they are instances of unfinished development, under circumstances of local excitement or general ill-supply.

"5. The *vascular apparatus* is nearly identical in all organs of secretion; its main requisite being a distribution of blood in such delicate vessels, as may readily permit the transudation of its fluid ingredients.

"6. In most instances the cytoblasts are formed, and the particular products manifested on the surface of a *limitary membrane*, which divides them from immediate contact with the capillaries: but this tissue is absent under circumstances which exclude the possibility of its being essential to the process of secretion. It seems entirely subservient to the mechanical office of support: it is found in

the true glands to be prolonged into the excretory apparatus, in those without ducts to be folded into closed tubes or vesicles; so as in the latter case to retain, in the former to conduct, the secretion.

"7. A distinction, implied in this differing arrangement of the limitary tissue, divides the glands into the two classes, which I have compared and contrasted. The specific difference of the smaller group consists in their not excreting from the body those materials, which are shed into them from the blood. *Their secretion is into closed cavities.*

"8. The glands without ducts *vary in activity* according to varying circumstances; sometimes their cavities are distended, sometimes nearly empty. In the latter case, that, which they had withdrawn from the blood, must again have passed into it.

"9. The last fact strikingly distinguishes them from the Wolffian bodies, as shewing that their sequestration of peculiar materials from the blood is only for *temporary or occasional* purposes.

"10. The metabolical action in regard of the circulation—this alternate withdrawing and rendering up again of certain particular materials, may be called the *common function* of the class; they belong to the offices of vegetative life, and are accessory to the circulatory system; they act on the blood occasionally, in respect of its chemical constitution." P. 85.

Mr. Simon before giving his physiological conclusions, draws a verbal distinction between the terms "use" and "function," which are often employed synonymously: taking "function" to mean merely that *which an organ does*, viewed absolutely and alone,—taking "use" to denote this action viewed *in its relations to the entire system*; "function," the organ's *method of fulfilling* an use; "use," Nature's *application* of the function. Applying this (as it seems to us) just distinction to the instance before us, the author believes that he has shown the Functions of the Thymus gland, and next proceeds to unfold its use:—

"The function of the Thymus may be stated in these words: by means of an apparatus strictly analogous to that of true glands, it secretes into a closed cavity certain particular elements of nutrition. Further, the secretion has been shewn to occur differently under different circumstances; viz.,

(1) "In most animals it occurs only temporarily. The secreted matter then presents itself in a *fluid form*, and is related to the universal material of nourishment, the liquor sanguinis, by the closest affinity of ultimate chemical composition.

(2) "In some animals, after discharging this temporary function, the gland gradually passes into the permanent exercise of a different, but analogous, act of assimilation, and manifests its secretion in the *solid form of fat*." P. 86.

Mr. Simon further remarks:—

"By principles developed in our morphological analysis, we are enabled to explain the twofold difference observed in the secreted products of the gland,—that they are sometimes fluid and albuminous, sometimes solid and fatty. In the instance of the hybernators, the accumulation has reference to a state extending over many months: during half the year the nutritive material is being gathered into its receptacles, during the other half is becoming slowly exhausted: so gradual are these processes, that the ultimate organisation of the gland assumes a form expressive of *permanence*; namely, the cytoblasts undergo their extreme development, and the cells originating from them become filled with a more elaborated secretion than that of the temporary Thymus. In the other instance (that of the young animal) the functions of the gland are exercised amid conditions of hourly change: as the amount of ingesta, on the one hand,—as the

breathing and muscular movements, on the other, may respective'y be more, or less; so will the Thymus have at its disposal a larger, or smaller, surplus from the general expenditure,—so shew a richer, or a poorer, sinking-fund of nourishment. Since the circumstances, which render the Thymus an index of the general nutrition, vary from hour to hour, we are prepared to expect that the peculiarities of the ultimate organisation of the gland in young animals should be those of *im-permanence*." 87.

Knowing, then, that the Thymus presents an apparatus for the retention of nourishment in organic combination—knowing too that this combination is temporary, and is made by Nature (with varying degrees) so loose, that it may readily yield in proportion to the needs of the system, the author remarks, we still have the task before us of assigning an object to these contrivances. We must refer our readers to the work itself for the facts and arguments which lead him to the conclusion that the THYMUS GLAND FULFILS ITS USE AS A SINKING-FUND OF NOURISHMENT IN THE SERVICE OF RESPIRATION:—

"For—whereas the operations of the gland are essentially œconomical, and its loosely-combined products are ever held at the call of the system; whereas its presence is distinctly conterminous with the highest form of respiratory function; whereas its actions obviously pertain to periods having a common physiological peculiarity;—how can we avoid identifying its use with the exigencies of these periods and of that function? The nature of those exigencies has already been stated; and I can conceive no manner in which the functions of the Thymus may be applied to meet them, other than this,—that what the gland sequestrates from the circulation does, in gradually reverting thither, accomplish those chemical purposes in respect of respiration and temperature, which under other circumstances are fulfilled by the effete products of active animal tissues.

"In other words:—An object (probably the single essential object) of the respiratory process is the maintenance of an independent temperature for the animal. . . . In order to this end, the particles of the body are gradually yielded to the oxidising influence of the atmosphere; they slowly burn. . . . In the active tissues the rapidity of oxidation is in the ratio of exercise. . . . . There are times and circumstances when these tissues waste infinitely little. . . . For such occasion how is oxidable matter provided? Surely by prior œconomy, by prior sequestration. . . . . And this may occur in a two-fold manner; most usually in the form of fat the material is diffused throughout the body, filling its interstices and clothing its surface; more rarely it is gathered within a single organ, and retains the albuminous form in which it was first added to the blood. The requisite link for uniting these two instances is furnished by the fact, that under certain circumstances the second merges in the first; the Thymus deviates from its more special function—it passes into the general method of œconomical secretion—it fills its cavities with fat-cells—it becomes, indeed, a mere glanduliform collection of fat." P. 90.

On this theory, Mr. Simon believes that every fact that has come to his knowledge in the history of the Thymus admits of ready explanation;—the larger anatomy of the gland, and its minute structure; the chemistry of its products; its morphetical analogies; the laws regulating its presence and assigning its abrupt termination; the phenomena of its development and decrease; its invariable augmentation after birth; its occasional persistence through life; the evident proportioning of its functions to special and individual circumstances of nutrition and muscular activity. And while observing that his theory thus serves to combine, harmonize and ex-

plain the various facts which he has developed, he plainly shows that many of these facts are inflexibly opposed to the several other theories previously enumerated.

In an Appendix, there is a Note on the Pathology of the Thymus, a subject as yet very little investigated. We find nothing particularly deserving of notice, excepting an explanation of some enlargements of this gland, in accordance with the author's views of its use in the œconomy.

We here take leave of Mr. Simon's interesting and valuable work, and it only remains for us to record the favourable opinion we entertain of the author's talents and industry. Fully acquainted with and justly appreciating the labours of his predecessors, he has pursued his investigations in the highest department of physiological science in the legitimate spirit of induction, collecting and analyzing facts, and advancing step by step in his inquiries, until, by observation of the phenomena and consideration of the laws of life, he has developed the functions and formed a theory of the use of the Thymus gland. We have endeavoured to present our readers with an analysis of his views, without attempting to discuss them. They must be carefully studied, and whether his opinions after examination be received or not, we venture to assert that his labours, as exhibited in this work, cannot fail to obtain for him a high reputation as an original inquirer and physiologist, and to secure an universal assent, that he has amply merited the distinguished honour which has been awarded him.

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A PRACTICAL TREATISE ON THE SPECIAL DISEASES OF THE SKIN. By *C. M. Gibert.* Second Edition. Translated from the French by *Edgar Sheppard.* 12mo. pp. 362. Churchill, 1845.

MR. SHEPPARD assigns the following reason for undertaking the translation of M. Gibert's treatise :—

"It may naturally, and therefore, perhaps, not very unreasonably, be asked, Why, since there are so many works, original and translated, already published in this country, upon 'Diseases of the Skin,' I have ventured to swell their number? The plain and simple reason is this: When I was in Paris, attending the practice of M. Gibert (who has a far greater number of English students following him than any other physician or surgeon in the French metropolis,) at the Hôpital St. Louis, my ears were constantly saluted with the question, 'Has M. Gibert written any work on cutaneous affections?' This being answered in the affirmative, was followed by another—'Is there any English translation of it?' and great was the mortification of many a young aspiring dermatologist, whose knowledge of French was not very extensive, to hear a negative response."

But for the reason here assigned we should certainly have deemed the present translation uncalled for; for although, as must any work proceeding from the pen of so able and experienced a practitioner as M. Gibert, the Treatise contains much valuable matter, we have been struck during the perusal of its contents with the want of originality in its views, its far too great dependence upon the dicta of preceding writers, and the pau-

city of practical directions which can be called the author's own. We looked for, at the hands of the physician of so celebrated a receptacle of the diseases on which he treats, a far fuller development of his own views and practice, and a much less frequent quotation of those of authors already well known to the profession. However, we must remember he is writing for French students and practitioners; and, in this point of view, feel gratified at his frequent quotations from the English authors, and the frank acknowledgment, so rare among his countrymen, of the improvements they have introduced into the study and practice of this branch of medical science.

The first chapter of "General Considerations" is an able and useful one, and from it we will borrow some observations.

*Causes.*—The *proximate* cause of most cutaneous diseases is unknown, and has been attributed to vitiated humors, changes in the blood, or to inflammatory action, according to the nature of the dominant theory of the day:—

"The wisest plan is to confine ourselves to the immediate result of observation, which has demonstrated to physicians in all ages, that the diseases of the skin are often dependent upon a special *diathesis*, which has caused, sustained, and reproduced them. The difficulty is to discriminate between the cases which are purely local, and those in which the disease is kept up by causes more or less secret, and more or less general; and on this head we ought to commend the efforts of the learned Lorry, although they have not met with the success which he expected. It is evident, for example, that certain *erythemata* of children and fat subjects, the *itch*, *herpes labialis*, under many circumstances, and *zona* itself, constitute merely local diseases, and merely require local treatment, although some of these affections do occasionally manifest themselves as the crisis, or the consequence, of a generally disordered state. On the other hand, the *eczema*, the *impetigo* and the *pseudo-tineæ* of infants at the breast, or during dentition, appear to be purifying or counteracting maladies, dependant upon certain general conditions which ought to be taken into consideration. Plethora, either local or general, a gritty and roughened state of the primæ viæ, nervous and circulatory fluxions, dependant on the revolutions of age, and many other circumstances well known to the practitioner, give rise to the *exanthemata*, to *acne* or *acne rosacea*, and to various species of cutaneous affections, the cause of which is elsewhere than in the seat of the apparent evil. Lymphatic debility is favourable to the development of *favus*, or the true *tinea*; the scrofulous diathesis often produces *lupus* or *herpes exedens*; the syphilitic virus regulates, and has under its dependance special forms of cutaneous disease. It is very evident then that the local ought never to be considered independently of the general state, in the study of this branch of pathology. When we observe also the spontaneous development of a very large number of *dartrous* affections, the hereditary appearance of some, the resistance which they offer to the most ably directed treatment, the facility, and I may say, the obstinacy, with which they reproduce themselves, the often dangerous effects consequent upon their suppression, &c., it appears difficult to entirely reject this ancient opinion, which has become proverbial, not only with the faculty, but with the uninitiated, as to the existence of an internal cause, a peculiar diathesis, which produces and keeps up, in many cases, the diseases of the skin." P. 15.

Among the *occasional causes* may be mentioned 1, *hereditary causes;* thus the disposition to *dartrous* affections seems transmissible, and M. Gibert states in a note that he has had "opportunities of proving in many subjects the hereditary nature of *icthyosis*, *psoriasis* or *lepra*, *impetigo*, *eczema*,

and *lupus*. 2. A few diseases, as *itch*, and perhaps *tinea* (the author includes the various forms of porrigo under this term), are *contagious;* but there is every reason to believe the various dartrous diseases are not so; and we must take care not to permit the occurrence of mere coincidence, arising from similar regimen, habits, and constitution to deceive us. 3. *Anatomical* and *physiological causes.*—A fine delicate skin easily penetrated by the blood is very liable to these affections; and a rough, thick, oily skin, which performs its functions with difficulty, and occurring chiefly in bilious temperaments, is also subject to papular and other eruptions. Alibert remarks that certain temperaments are especially liable to certain forms of the disease; "thus, lymphatic and lymphatico-sanguineous persons are principally liable to scaly and furfuraceous eruptions; sanguineous and sanguineo-lymphatic persons are frequently tainted with the impetigo of Willan, and bilious and melancholic subjects are particularly liable to pustular and squamous affections." The influence of *age* is often very marked; as is seen in the eruptions of the head and face of children, the pustules on the forehead at puberty, the obstinate cutaneous disease at the critical period of life of women, and those which result from the imperfect cutaneous action of old age. 4. *Hygienic Causes.*—To this head must be referred the effects of *climate* and of season. The want of *cleanliness* is one of the most potent of all causes. The influence of bad and insufficient *diet* has always been recognized. The suppression of perspiration, even when only local, often gives rise to cutaneous disease. "We have often seen the sudden suppression of the customary perspiration in some part of the body, the feet for example, followed by dartrous eruptions on the ears and in other places." The suppression of the intestinal flux, and of the menstrual and hæmorrhoidal discharges also gives rise to various cutaneous diseases. Masturbation exerts a marked effect in inducing certain pustular affections, and prolonged continence produces often the form of acne known as the "pimples of chastity." Frank states that eunuchs enjoy a singular immunity from skin disease. Certain occupations produce certain forms of disease, *e. g.* prurigo of beggars, the papular affection called "grocers' itch," the psoriasis of washerwomen, &c. Some occupations, although unfavorable to health, are yet liable to few cutaneous diseases, as those of nightmen, miners, &c. Sedentary professions and studious habits, especially if an exciting regimen is maintained, often produce pustular or squamous eruptions or *prurigo* of the genitals. Powerful or long-continued depressing emotions frequently induce skin-disease. 5. *Pathological Causes.*—Thus scrofula and syphilis are frequently the source of these affections. Gout and rheumatism sometimes favor their development or alternate with them; and the cutaneous diseases not unfrequently induce each other. "But a practical remark, to which our predecessors attached a high importance, and which we ought not to neglect here, notwithstanding the oblivion into which it appears to have fallen, is, the intimate connexion which exists, in many cases, between the internal organs and the tegumentary affections, and the danger which we run in too suddenly suppressing, or even sometimes in treating too methodically, in some persons, the cutaneous maladies to which they are subject."

*Progress.*—This is usually slow, and accompanied by exacerbations

frequently without obvious cause. The tendency of these affections to creep from one part to the other has given rise to the Greek term *herpes*, and the Latin *serpigo*:—

"It is not very uncommon to see them terminate by *metastasis*; either their suppression involves the affection of another organ than the skin, or this affection itself, pre-existing, becomes very intense, and causes the dispersion of the cutaneous malady; or lastly, in some cases, we must admit the transportation of this species of movable principle, which our predecessors did not hesitate to designate, correctly or incorrectly, under the title of dartrous. The greatest number of acute and chronic diseases is observed to be consequent on the disappearance of eruptions; whether they may or may not be dependant upon this suppression, it is not always so easy to establish in practice as one might at first imagine. Nevertheless we may truly affirm that examples of *mental alienation*, *epilepsy*, *arachnitis*, internal inflammations, and various organic lesions, occurring more or less quickly after the sudden cessation of cutaneous maladies, ought to render the physician extremely prudent in their treatment when they appear constitutional, that is to say, dependant upon a general and well-characterized modification, either of such and such a viscera in particular, or of the entire economy.

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"Sometimes a kind of *crisis* is observed in these diseases. In some cases we see a fever, an internal inflammation, a sanguineous or mucous flux (particularly if it has been anteriorly suppressed) cause, by its sudden appearance, the cessation of the pre-existing cutaneous affection. Occasionally too we observe the manifestation of an exanthema, or a dartrous eruption, or the return of a previously suppressed cutaneous malady, bring about the crisis of an internal inflammation. '*Alvi affectiones, ut diarrhea, colica*, &c., *in cutis affectiones migrant*,' says Baglivi. We know the success obtained by some practitioners from the inoculation of the *itch*, the employment of sudorifics, the application of irritating ointments or vesicatories, in cases where internal diseases, more or less severe, succeeded to cutaneous maladies. M. Alibert alludes to a severe affection of the air passages caused by the driving in of a dartrous eruption after a cold bath, and which yielded to the return of this eruption, induced by the use of diaphoretics, and the application of a large blister upon the chest." P. 24.

*Treatment.*—M. Gibert observes, that the Greek and Arabic writers laid great stress upon the employment of *hygienic* means; and adds, "we must not here omit to notice, that the cleanliness, the regular life, the change of habits, which the class of people who are received into hospitals undergo, are often sufficient of themselves to dissipate the cutaneous diseases, which have procured their admission, and that, if we do not attach sufficient importance to this favorable influence, we may be led to attribute too much to the pretended efficacy of remedies, which have had little or no part in affecting a cure."

The ancients, too, and even the practitioners of last century, much insisted upon a methodical preparation of the patient by bleeding, baths, purging, &c. prior to commencing the special treatment of the skin-disease:—

"In the present day we have, for the most part, fallen into the contrary extreme. Practitioners of the highest celebrity do not hesitate to attack immediately, upon first sight, with caustic, or other substances, the most inveterate cutaneous affections, without even having recourse to any internal remedy during the whole course of treatment.

"There are evidently two dangers to avoid; and if it is absurd to follow and

observe indiscriminately, in all cases and with all subjects, the therapeutic precepts which the ancients practised, with more discernment perhaps than we give them credit for, it is not more rational to entirely neglect this preparatory method, and particularly all general treatment, in diseases which frequently depend upon a particular constitutional state, and the cure or speedy disappearance of which is not always so exempt from dangers as some physicians of *the new school* affect to believe." P. 29.

The author, after enumerating at length the various medicinal substances which have at various periods been employed for the relief of cutaneous diseases, lays down some general rules for guiding the practitioner through what he well terms the "therapeutic labyrinth"—leaving the exceptions to be vindicated when treating of the individual diseases. "It is particularly in the diseases which we are now considering, that the application of energetic agents, advised by different authors, requires all the tact and acumen of an experienced physician. Here, as in many other cases, the most efficacious remedy may become a poison in the hands of ignorance; poison itself can become a salutary remedy, when it is suitably administered by a clever practitioner."

1st. *Antiphlogistics.*—These are called for in their various degrees, from depletion to a low and soothing regimen, especially at the commencement of treatment in vigorous subjects, when much irritation prevails, and the progress of the disease is rapid:—

"Nevertheless, we must mention, beforehand, that whilst twenty years ago *specific* methods were abused, the sulphureous and other excitants in usage being applied off-hand and indiscriminately to every thing which bore the name of *dartre;* in the present day, on the contrary, prepossessed with the modern idea, which tends to attribute to inflammation every shade of alteration which the tissues, and the skin amongst them, can present, we insist more and more frequently upon antiphlogistics, and particularly upon topical emollients, which, in many cases, have merely the effect of prolonging the evil, by favouring the fluxion and morbid exhalation which may be noticed in the integuments in most dartrous diseases." P. 36.

2nd. *Astringents.*—Although these often possess great advantages over antiphlogistics, considerable caution is necessary in their employment. "It is not uncommon to see pruriginous, vesicular, and humid eruptions suppressed at their very commencement, without any danger or inconvenience, by applications of burnt meal, *extract of lead*, ointments. with *white lead*, or even by *ice*, *cold-water*, *red-wine*, &c. How often has *eczema* (*dartres squameuses humides*), which continues to spread and extend itself under the influence of emollients, been rapidly cured by tonics, astringents, and discutients. However, they are generally only recommended at rather an advanced period in the treatment. M. Bland, of Beaucaire, has recently called the attention of practitioners to the advantages of *soot* in the treatment of dartrous affections, particularly favus, lupus, and acne rosacea. (Revue Med. T. 2, 1834.")

3rd. *Narcotics*, such as *henbane*, *belladonna*, *opium*, &c., are sometimes resorted to, externally or internally, when there is violent or insupportable itching: but these are only palliative, and by their repelling power may occasionally become injurious:—

4th. "Caustic applications, such as *the nitrates of silver and mercury*, are

frequently employed, in the present day, for the dispersion of dartrous maladies, even to the entire neglect of all internal remedies. This does not appear to us a very rational method, and we think that these energetic agents ought to be reserved for three principal circumstances: 1st, when a cutaneous, and particularly a contagious, disease, such as the itch, is at its commencement, and we can hope by this means to arrest it in its birth; 2nd, when an inveterate cutaneous disease has been already combated by internal and external means of a different kind, and we have no reason to fear the effects of the suppression of the local evil upon the economy, nor the continuance of the general morbid disposition which has already produced it, and will produce it again: 3rd, when it becomes necessary to arrest the progress of *dartre rongeante* or lupus." P. 38.

5th. *Issues.*—These are so abundantly employed in French practice in cases which English practitioners would be content with the use of purgatives, that the abominable odour they produce may be detected in every public vehicle, and in all other assemblages of persons, even of the young. In skin diseases, however, they are now prohibited by many practitioners, as tending to maintain an undue tegumentary irritation and fluxion—itself predisposing to the return of these affections. Blisters or cauteries are useful towards the termination of tedious cases, especially if any internal organ seems to be suffering much; and it is in the class of cases in which the suppression of long-continued eruptions has given rise to internal disease, that these and other revulsive measures are useful.

6th. *Tonics.*—These are very useful in scrofulous and lymphatic subjects; and the *alkaline subcarbonates* frequently form admirable combinations. The *muriates of lime* and *barytes* are sometimes useful in scrofulous disease, cautiously given in small doses.

7th. *Purgatives.*—The ancients used these much in skin affections, and some modern physicians declare they obtain nearly constant success by their exclusive employment. Most chronic cutaneous affections are accompanied by constipation.

8th. *Sudorifics.*—The various descriptions of baths are of powerful agency in cleansing the skin from squamæ and crusts, and re-establishing its functions, always perverted in chronic affections. An artificial *sea-water* bath may be made by adding six or eight pounds of common salt, rendering it less irritating by the addition also of half to a pound of gelatine. *Alkaline* baths may be formed by four ozs. of subcarb. potass and some gelatine, and M. Gibert often employs a *saponaceous* bath, formed by dissolving half-a-pound of soap in a strong decoction of bran and then adding it to the water. The *sulphureous* baths may be formed by adding four ozs. of the solid, or eight ozs. of the liquid sulphuret of potass. The crystallised hydro-sulphate of soda, however, furnishes a preparation for baths less odoriferous and more approaching those of nature. Sudorific drinks, as sarsaparilla, guaiacum, mezereon, to which antimonial preparations are added, are especially useful in inveterate syphilitic eruption.

9th. *Specifics.*—Although a large class of skin diseases may be amenable to these, it by no means follows that they should always be employed to the exclusion of all other medication. Most of the vegetable juices, baths, &c., mentioned by the author, do not seem to us to deserve the title of specifics. Sulphur for the itch is about our only one; although the various other stimuli enumerated often prove curative in the different chronic diseases.

M. Gibert thus concludes his general remarks upon the treatment :—

"In order to render more precise the general rules which we have laid down, we will take a particular example, and will mention the order to be observed in a methodical and rigorous treatment.

"Supposing a patient, with a very strong and vigorous constitution, to be affected with an *impetigo:* we would commence by prescribing a preparatory treatment (low diet, bleeding, baths, diluents, purgatives.) Afterwards, in the course of the first period, relaxing drinks, an abstemious and regular regimen, and, occasionally, a warm bath; still later, bitter and purifying drinks, and vapour baths; lastly, sulphur baths, preparations of sulphur externally and internally, topical astringents, corrosives, and even caustics, a blister, too, if the eruption were intractable and circumscribed, (the crusts being previously detached by emollient applications.) In following this course, we effect a slow, it is true, but a certain cure, with but little probability of a relapse.

"It is here that we are reminded of the old adage, so full of useful application, either in medicine or surgery :—

"Sat citò si sat benè." P. 41.

The author, not embracing in the present work the consideration of the more general affections of the system manifesting themselves upon the surface, as scarlatina, variola, rubeola, erysipelas, &c. presents us with the following modification of Willan's Classification.

1. *Exanthemata*, containing three species, *Urticaria*, *Roseola*, *Erythema.*
2. *Bullæ*, containing *Pemphigus* and *Rupia.*
3. *Vesiculæ*, containing three, *Scabies*, *Herpes*, *Eczema.*
4. *Pustulæ*, containing *Ecthyma*, *Acne*, *Impetigo*, *Tinea*, (the *Porrigo* of Willan; the affections to which the term tinea is ordinarily applied being termed by M. Gibert *Pseudo-tineæ.*)
5. *Papulæ*, containing *Prurigo*, *Lichen.*
6. *Squamæ*, containing *Ichthyosis*, *Pityriasis*, and *Lepra;* (Dr. Gibert considering Psoriasis and Lepra to be the same affection.)
7. *Tubercula*, containing *Lupus*, *Elephantiasis Græcorum* and *Arabica*, and *Cheloidea.*
8. *Maculæ*, containing *Ephelides*, *Nævus*, and *Purpura.*

The omission of so many important diseases very much diminishes the utility of the work for others than such as are attending the practice of his hospital.

Under each of the above orders of cutaneous diseases is embraced the consideration of the modifications produced in the various species by syphilis; and, at the end of the work, we are presented with a "*General Summary of the History of Syphilitic Eruptions.*" This account of the "*Syphilides*" we are disposed to consider the best portion of the work.

M. Gibert prefaces his observations by some remarks on primary symptoms, which are not without interest :—

"The *primary venereal chancre* is one of the most common and characteristic phenomena of syphilis. Nevertheless, the mode of formation of this ulcer has been generally badly described in the special treatises on venereal diseases; there is even a writer who has been anxious to found a *new* therapeutic method on an error which has crept into the description which many praiseworthy authors have given of it. Incorrectly believing that a *vesicle* commonly preceded the ulceration, this physician recommended the application of the *ectrotic* method (cauterization) in the treatment of chancres at their commencement, as a means calculated

to destroy the evil in its embryo, and prevent the absorption of the virus and the development of consecutive phenomena, without the necessity of resorting to internal treatment. But, besides cauterization being a means commonly employed for a very long time, and its effects as a preservative often having failed, observation proves that the venereal chancre does not ordinarily commence by a *vesicle*; nothing has been perceived but a litule swelling and redness, and soon afterwards an ulceration, which has formed without any cuticular elevation. It is very important to recollect here the characters of a *vesicular* cutaneous affection, of short duration, which sometimes occupies the internal surface of the prepuce, and which may be followed by excoriations, which have been mistaken for chancres. This slight disease, which we have described under the name of *herpes præputialis*, is characterised by small vesicular groups, commonly accompanied by redness and itching: they most frequently dry up in a week, are not irritated by improper applications, or other stimulating causes. The venereal chancre properly so called, can only assume temporarily, and in some exceptional cases, that vesicular or (pustular) appearance at its commencement, which we have already mentioned with regard to the flat tubercle. Like this latter, in fact, the chancre appears to have its seat in the tegumentary follicles; and the follicular inflammation may accidentally present at its commencement this vesicular appearance, but not from a *vesicle* or a *pustule*, properly so called. It is only in *inoculation* made with the lancet, that veritable cutaneous pustules are developed, and afterwards give rise to a chancre.

"Some physicians are determined to look upon *buboes* as nothing but an engorgement of the lymphatic glands, caused by the irritation of the parts where the absorbent vessels which lead to them rise; and, consequently, are unwilling to admit the existence of buboes *at the first onset*. We have many times observed this sort of bubo (without any other anterior symptom) in men and women. Even more, we have *inoculated* in these cases the pus of the bubo, and caused the formation of the characteristic pustule to which the venereal chancre succeeded. This inoculation has been always successful with us when we have waited till the wound formed by the spontaneous or artificial opening of the suppurated bubo has been converted into a veritable venereal ulcer, which generally happens in a few days.

"The *flat* moist *tubercles*, incorrectly described under the name of flat *pustules*, are a very common primary phenomenon. They show themselves on the scrotum, the vulva, and in the neighbourhood of the anus, usually without any other local symptoms preceding their appearance.

"It is very generally agreed, in the present day, that *gonorrhœa* may depend on various causes, and that it is not always syphilitic. But, on the other hand, we know, without doubt, that constitutional syphilis very frequently succeeds to this primary symptom; and that, unfortunately, we are in possession of no certain sign by which we can distinguish the venereal gonorrhœa from that which merely consists in simple inflammation of the urethra.

"M. Ricord pretends that the only blenorrhagiæ susceptible of giving rise to consecutive symptoms, are those which are accompanied by a urethral chancre. But this is a supposition which does not appear to us sufficiently justified by the few exceptional cases in which a venereal ulcer has been discovered deep in the urethra affected with this discharge. Time and direct observation have done justice to the old opinion, which regarded as *ulcerated* the mucous membranes affected with puriform catarrh: relative to gonorrhœa in particular, autopsy has many times revealed that the urethral canal followed in this respect the common law. It is a question which I shall only just allude to here, and which will be found treated of more fully in my *Manuel des Maladies Vénériennes*. Inoculation will be, according to M. Ricord, a certain means of deciding this point. But as in cases of this kind it usually only gives rise to negative results, I do not think that we can induce from it the future innocuity of blenorrhagia unsuccess-

fully inoculated. In fact, we have not hitherto succeeded in communicating by inoculation any but one venereal symptom (chancre); and yet, not only the *flat tubercles* and *vegetations* are transmissible from individual to individual, but even certain consecutive symptoms appear in some cases to be able to transmit themselves by contagion, although no one has ever been able to inoculate them with the lancet." P. 341.

All the elementary forms of cutaneous diseases may be produced by syphilis, so that we have an *exanthematous* syphilide, a *pustular*, a *papular*, and so on. They are distinguished, however, from analagous forms of the diseases, arising from common causes, by various marks, sufficiently satisfactory :—

"The *coppery* discolouration is one of the most certain; it may be found in all the forms of cutaneous syphilis, although it may not be always equally apparent, equally easy to seize upon, especially to an inexperienced eye. The *ulceration* which succeeds to many species, has also so characteristic an appearance, that it is impossible to mistake its nature. Those deep, round, hard-edged, callous, and perpendicularly cut excavations; those *serpiginous* ulcerations, which form segments of a circle and of spiral lines; these thickened, greenish, darkish *crusts*, deep in the dermis, which sometimes cover the ulcerations, and which particularly succeed the syphilitic bullæ, pustules, and tubercles, have evidently no deceptive appearance. The *cicatrices* themselves, unequal, spiral, or rounded, white and depressed, which follow ulcerated tubercles and pustules, have characters by which their origin can be recognised. Moreover, in the greatest number of cases, past circumstances, the pre-existence of primary local phenomena, the coexistence of other venereal symptoms, such as discharges, flat tubercles on the genitals or anus, *granulated erosions* of the uterine neck, ulcers of the velum palati, exostoses, &c., assist in removing all doubts which we may entertain." P. 342.

*Syphilitic roseola* is by far the most common form of the *exanthematous* syphilides, M. Gibert having only twice seen examples of syphilitic *urticaria*. The roseola often shows itself during the primary symptoms, as gonorrhœa or chancre, but, as the other forms, for the most part, as a consequence of ill-treated or neglected venereal disease. "More frequently than the other forms, we see it suddenly break out in persons who, at a more or less distant period, have been tainted with syphilis, owing to some moral or physical disturbance which seemed to determine the manifestation of a poison, the germ of which had long been latent in the system." The spots of syphilitic differ from those of ordinary roseola in their copper colour, their permanence, number, which is greater, and duration. Their true character may be masked during the acute stage of the first few days, but it then becomes revealed by the small, dull, grayish, copper-coloured, or livid stains, which are left for a long period.

Of the *Bullous Syphilide* there is only one species, *syphilitic rupia*, which is very common, occurring generally in old and intractable cases and in cachectic habits, and co-existing for the most part with other secondary symptoms, as iritis, periostitis, &c. "The concomitant signs, the copper-coloured or livid areola which surrounds the bullæ, the thick greenish crusts which they form on drying, the deep subjacent ulceration, with perpendicular edges and a greyish base, and the white, depressed cicatrices which they afterwards leave, serve to distinguish the *syphilitic*

from the *simple*, and even the *prominent* rupia, with which it has more analogy.

The *Vesicular Syphilide* is very rare, and is situated on the limbs and trunk, and not the organs of generation. In only one instance has M. Gibert observed the disease taking on the form of *eczema*. In the other instances it has resembled *varicella*, consisting then of large, isolated vesicles, having a slow march and dull appearance, and being sometimes surrounded by a small copper-coloured areola.

Of *Pustular Syphilide* there exists two varieties; the one, resembling pustules of *ecthyma* or even of *variola*, the other those of *acne*. Even experienced observers have at first sight mistaken the marks of variola for traces of syphilitic pustules, or the elevations of variola in the primary stage for the commencement of a syphilitic ecthyma:—

"The following are the distinctive characters of the *pustular syphilide*, whether it shows itself in the form of *phlyzacious* pustules (*syphilitic ecthyma*), or those called *psydracious*, and which present some analogy to the small, pointed, and isolated pustules of the genus *acne*.

"In the first case, the pustules, generally more voluminous than those of *ecthyma vulgare*, are frequently situated on the face, sometimes on the limbs, sometimes also on the trunk; they slowly and imperfectly mature, are covered with thickened brownish crusts, under which ulcerations often form, which leave behind them round, white, and depressed cicatrices. This variety of pustular syphilide is very rare, if it is not quite among the newly-created ones.

"In the second case, which is much more common, the pustules are numerous and approximated, very frequently extending over the whole tegumentary surface (except the face and the forehead, where they are extremely rare), sometimes confined to the trunk or limbs; they ripen imperfectly, quickly dry up without leaving any sensible crust, leaving behind them livid, copper-coloured, or grayish marks, which last a very long time; or even small superficial cicatrices, round, and of a whitish colour." P. 198.

*Papular Syphilide* is very common, and shows itself under two varieties. In the first, there are slightly voluminous papules, always however more voluminous than those of *non-syphilitic lichen*, their colours, slow progress, great number, the grayish spots they leave behind, and the absence of itching, distinguishing them from lichen and prurigo. In the other variety, the prominences are larger, flattened, and covered with small *squamæ*, bearing much resemblance to the squamous syphilide. This syphilide is sometimes observed during the existence of chancre or blenorrhagia, when these have continued for a long space of time:—

"We never see, as in the ordinary *lichen*, merely a region of slight extent remain affected, or very marked intervals separate the papules, as in *prurigo*; but, on the contrary, the skin is dry, coppery, violet-coloured, sprinkled with prominent papules, or marked with small, grayish, or livid spots, so that we can scarcely find here and there—on the back, for example, or on both surfaces of the arms—any points where the integuments have preserved their colour and their integrity. The face alone is very often untouched; still the forehead is nearly always affected. The papules, after having lasted some time, terminate by resolution, and are re-placed by others, which are renewed, and keep up the eruption for weeks, months, and even years. This form of the syphilitic eruptions, very common in the adult, is never observed in infancy. At least, we have never met with it at this age. On the contrary, as we have already had

occasion to remark, the *pustular* syphilides (with large pustules), and the *tubercular* (with *flat* tubercules), are common in this latter period. Although less severe than the two forms which we have just mentioned (since it does not involve ulceration), the *papular* syphilide frequently is of a long duration, and offers an obstinate resistance to remedial measures." P. 224.

*Squamous Syphilide* is one of the most common forms of syphilitic eruption; and is distinguished from the genus *lepra* (under which term M. Gibert includes psoriasis) by the following characters:—

"The colour of the patches is more obscure, livid, or coppery; they are covered with small greyish scales, very different from the shining and pearly ones of *psoriasis*; rarely confluent, they are commonly of a lenticular form, which more resembles *psoriasis guttata* than any other eruption. It sometimes, however, disposes itself in rings more or less analogous to those of *lepra vulgaris*. M. Biett is even of opinion that the scaly eruption which the English authors have described under the name of *lepra nigricans*, is syphilitic.

"When the patches of *psoriasis* are deprived of their squamæ, when the chronic march of the disease, the bilious tint of the subject, and the slight habitual colouring of the integuments tend to obscure their commonly rosy colour, the diagnosis becomes less easy. If, however, we carefully weigh the past and concomitant signs, especially if we seek in the places which it selects (the elbows and knees in particular), the characteristics, generally more marked than elsewhere, of the eruption, it is very rare that we can mistake for syphilitic, an affection which often deceives the inexperienced and inattentive." P. 259.

M. Biett considers a peculiar eruption of the palm of the hand somewhat resembling *psoriasis palmaria*, to belong to the scaly syphilides, and terms it *syphilide cornée*. Small scaly prominences are observed with hard centres, analogous to the *corns* of the feet. The diagnosis is sometimes much assisted by the co-existence of copper-coloured scaly patches on the wrist.

The *Tubercular Syphilide*, which has often been miscalled pustular, is the most common form of cutaneous syphilis. The author enumerates five principal varieties. 1. *Flat* tubercles found about the genitals and anus, or between the toes. 2. *Round* and larger tubercles, sometimes acquiring the size of a nut, often remaining indurated without ulcerating, and appearing in small numbers about the head, face, and neck. 3. A *granulated* tubercle, having its seat at the angles of the mouth or alæ nasi, being "small, greyish or copper-coloured, and occasionally presenting small cracks or superficial ulcerations." 4. The *serpiginous tubercle*, occurring on the trunk and furrowing "with crustaceous and serpiginous ulcerations, which form segments of a circle, or irregular rings, and species of well-characterized letters or figures." 5. *Herpetiform tubercles*, much resembling the preceding, appearing especially on the forehead and hairy scalp, and characterized by small rings composed of flattened and closely approximated tubercles, which ulcerate superficially, and are covered with small adherent crusts. Besides the above well-marked varieties, there are other tubercular eruptions which cover the limbs, back and chest, continuing indurated, or terminating in resolution; sometimes ulcerating and encrusting, and at others, imperfectly suppurating:—

"It is most frequently the *tubercular* form which the syphilitic eruptions which we see happen in *nurses* who are infected by a child, assume. Small tubercular elevations form close to the nipple, and are converted into crustaceous ulcerations; flat tubercles afterwards show themselves on the anus and the parts of generation: sometimes there is a general eruption. Nearly always, if the evil is not

arrested in time, other consecutive symptoms supervene, such as ulcers in the glands of the neck, granulated erosion of the neck of the uterus, &c. A very remarkable thing, and one which we have often proved at the Hôpital de Lourcine, is, that when the nurse suckles her own child at the same time, the latter may remain well if the breast which it sucks is so; whilst the breast which is devoted to the infected nursing becomes alone affected, although there may already have supervened in the nurse the various consecutive symptoms which we have alluded to. Nevertheless, if the suckling were prolonged without the nurse undergoing any treatment, there is no doubt that the second child would, after a certain time, contract the disease.—(See my *Manuel des Maladies Vénériennes.*") P. 320.

*Maculæ Syphiliticæ.*—These are commonly consecutive of some of the syphilides we have enumerated and are distinguished from *ephelides* and *pityriasis versicolor* " in that they are commonly of a round shape, rarely exceed the size of a half crown, are, in general, less numerous, are met with on the face, and particularly on the forehead and eyebrows. They are most frequently of a coppery-red, sometimes almost blackish, give rise to slight or no itching, and are only rarely the seat of a trifling desquamation." They are, nearly always, too accompanied by other secondary symptoms. It is still undetermined whether these stains are ever elemental, Biett regarding them as mere traces of pre-existent forms. In two instances, however, M. Gibert believes he has seen such.

In the *treatment* of the syphilides, M. Gibert speaks highly of the *cinnabar fumigations*, either partial or general. In other cases he has used with good effect, the new combinations of *mercury* with *iodine*, *cyanogen* and *bromine* in the form of *frictions* to the diseased parts. But as these preparations are very active and irritating, they require great care for their employment. In a letter addressed to the translator he speaks highly of the syrup of the *deuto-ioduret* of *iodine*. The dose is from 1 to 2 tea-spoons full daily, each of which contain $\frac{1}{8}$ grain of the bi-iodide of mercury, and 10 grains of the iodide of potassium. " I attribute the use of iodide of potassium in large doses, become so general in the treatment of constitutional syphilis, to the success which I obtained by means of this syrup at the Hôpital de Lourcine in 1836." M. Biett entertains a high opinion of the treatment of constitutional syphilis by *corrosive sublimate* upon Dzondi's method; *i. e.* commencing with $\frac{1}{20}$ gr. and gradually augmenting it to one or two grains in the 24 hours. A grain of the sublimate is divided into 24 pills, one of which is at first given daily, adding another every two or three days until 24, 30, or 36 are taken in divided doses daily. In almost desperate cases this plan has admirably succeeded. The danger of such a medicine administered without due precaution is obvious. When mercury has not been deemed admissible, the *muriate of gold*, applied by frictions to the gums in doses of $\frac{1}{4}$-$\frac{1}{8}$ gr., mixed with inert powder, has been used with marked success in some cases, though little confidence is in general placed in its efficacy. *Sudorifics* and *Narcotics* are often valuable means.

Simple, alkaline, or sulphur baths, combined with the internal use of corrosive sublimate or the proto-ioduret of mercury, form the ordinary treatment at St. Louis. If the disease is very obstinate, Dr. Scatigna's plan of employing mercurial friction is resorted to, viz. the deposition of a drachm of the ung. hyd. in the axilla daily for three days, when the patient takes a bath, and the same treatment is re-commenced.

Upon *Syphilis in the Infant*, we find the following observation:—

"It is always by a syphilitic eruption that the poison transmitted from the mother is discovered in a new-born infant. It usually shows itself towards the close of the first, or at the beginning of the second month after birth. It has its seat on the perineum, the internal surface of the thighs, and the neighbourhood of the organs of generation, in the form of *flat tubercles*, or syphilitic *ecthyma*, and from thence it spreads over a variable extent of the integuments. A little later, the mucous membranes become affected, particularly the mouth, and the labial commissures; it is then that, if the child is confided to a nurse to suckle, the nipple of the latter ulcerates, and the disease is communicated thereby. Syphilis, in the new-born infant, is always a severe malady; it frequently falls a victim to it in a few weeks. Nevertheless, if it is well constituted, if we at once treat the nurse and the child, and if they are both placed in favourable hygienic conditions, a cure is very easily obtained. This is much surer too in cases where the infant is merely secondarily infected, that is to say, if it has received the poison posterior to birth, as, for example, in the very common case where the nurse has suckled her own child conjointly with the strange one infected by its parents.

"We generally confine ourselves, in children, to the employment of topical applications, such as unctions with the following pommade:

℞ Opiate Cerate . . . . . ℥j.
Ammoniacal Oxychloride of Mercury . 3j.

Care is, moreover, taken to prescribe emollient baths, and to watch that the infant is properly cleansed. If it is being suckled, the nurse is made to take corrosive sublimate internally, in the form of pills, such for instance as the following:

℞ Extract of Aconite . . . . . gr. xij.
Powdered Opium . . . . . gr. ij.
Dento-chloride of Mercury . . . gr. ij.

Mix and divide into eight pills; one to be taken every morning at breakfast." P. 357.

This, which we consider the best portion of the work (for we cannot allow the justice of the translator's eulogium on the chapter on Elephantiasis,) has occupied so much of our space, that we have only room for a few observations on Scabies:—

*Contagion of Scabies.*—"Scabies is an accidental and contagious disease, which is propagated by the mediate or immediate contact of affected with sound individuals. But this propagation is impeded or favoured by a number of accessory circumstances, and there is nothing so common as to see persons, and particularly medical men, expose themselves in a more or less direct manner to the contagion, without becoming tainted with the malady. It is thus that in hospitals it is rare to see the servants of the establishment, the pupils, or the physicians contract it, although there are daily intimate and close communications between them and the patients, and they generally take but little precaution in examining, visiting, and touching those who are affected with the disease. We would not, however, wish this observation to inspire, either professional or non-professional persons, with too great a security; for, on the other hand, we now and then see examples of its development, for the first time, in individuals who for some time past have been in circumstances favourable to its contraction, without being able to give a reason for the innocuity in the one case, the unfortunate result in the other, of the relations which have not appeared to change their nature.

"The most numerous examples of the itch are to be met with in young persons; and this is owing to the greater number which this age, compared to others, presents, and to the occupations, and the frequenting places of debauch, so peculiar to this period of life.

"Women are much less tainted with it than men, which, doubtless, may be attributed, in a great measure, to the kind of life they lead." P. 97.

*Diagnosis.*—Although this is easy in the simple form of the disease, it becomes somewhat difficult when it is complicated by other diseases, as eczema, &c., modifying its characters. Even its simple form is often confounded by medical men with lichen or prurigo; and great inconvenience to the patient and loss of reputation to the practitioner may be the result. In *prurigo* there are no vesicles but only papules, which preserve the natural colour of the skin, or are covered by little dark crusts caused by their having been excoriated by the patient's nails. The papules are found especially upon the back, shoulders, and the dorsal and external aspect of the limbs; the itch vesicles exhibiting themselves between the fingers, on the wrists, the articular folds, and on the internal aspect of the limbs, the accompanying itching being much less painful than that of prurigo. The sensation from scratching is rather agreeable, while in prurigo the skin may be lacerated, and yet relief not obtained. *Lichen* is also a papular affection, and bears no resemblance to scabies, except in the lichenoid affection termed *grocers' itch*. In this the papules are grouped on the dorsum of the hand, the itch vesicles preferring the inter-digital spaces. The vesicles of *eczema rubrum* are more closely grouped and more inflamed than those of itch: they are especially found in the axillæ, the ears, forehead, and genital organs; and give rise to smarting rather than itching. Unfortunately they may complicate scabies. *Ecthyma vulgare* gives rise to pustules, which are rarely numerous, and not to vesicles, and is not attended with decided itching. They are usually converted into isolated crusts.

*Treatment.*—The author believes that, in some cases, sulphur should be given internally as well as employed externally; *e. g.* when the cure is desired to be rapid, the inconvenience of suppressing a long-continued eruption is dreaded, or its character is not very clearly manifested. The sulphur fumigations are not easy of application save in hospitals, and are not even speedy means of cure there. The lotion proposed by Dupuytren, and modified by Alibert, is a good one. In one bottle ℥j. of sulphuret of potash or soda is dissolved in 2lb. of water; and in another, there are ℥ ij. of sulphuric acid. At the time of application, the patient places a glass of each in a basin filled with hot water, and washes the part affected for half an hour morning and evening. This remedy has only a slight odour, and does not stain the linen: but M. Gibert prefers the *hydro-sulphate of crystallized* soda or Anglada Salt. The *liniment of Jadelot* (sulphuret of potash ℥ij., white soap ℔j., oil of poppies ℔ij. ol. thyme ʒj.) often proves irritating, giving rise to eczema rubrum. *Valentin's* liniment is composed of ℥j. ol. amygd., ʒj. sulphuret, and ℈j. of camphor, is less irritating, and much preferable; but, even with sulphur baths, it requires 10 to 15 days to cure the disease by its means, But we cannot understand the author as respects the time required, for he states, the sulphur ointment requires also 15 days to effect a cure—an infinitely longer period than is ever, according to our own experience, necessary for the use of this nastiest but best of preparations. The progress of the disease may be arrested if the patient is seen early enough, by opening the first vesicles that appear, and cauterizing with the *nitrate of silver*. Friction with common olive oil is efficacious in children.

I. PATHOLOGIA INDICA, OR THE ANATOMY OF INDIAN DISEASES, MEDICAL AND SURGICAL, BASED UPON MORBID SPECIMENS FROM ALL PARTS OF INDIA IN THE MUSEUM OF THE CALCUTTA MEDICAL COLLEGE. Illustrated by Cases, &c., and Comments, Physiological, Practical, and Historical. By *Allan Webb*, B.M.S., &c., &c. Part I. Calcutta. Carey and Co. 1844.

II. TRANSACTIONS OF THE MEDICAL AND PHYSICAL SOCIETY OF BOMBAY. Part VI. Bombay, 1843.

DR. WEBB'S slender and most unpretending volume reflects the highest credit on its talented author. Within the compass of a hundred pages or so, he has managed to compress a large amount of curious physiological disquisition, as well as a good deal of valuable practical information. There is indeed a want of method and skilful arrangement in grouping many of the details that are brought forward; but this minor defect is amply compensated for by the importance of their character, and by the admirable scholarship that is often brought into requisition to bear and throw light upon them.

The first part of the work is taken up with a description of the preparations in the museum at Calcutta that are illustrative of the diseases of the Heart, Arteries, and Lungs; the descriptions being interspersed with reports of a good many cases, and with practical observations by Dr. Webb on the general pathology of these organs. The remaining portion of the volume is devoted to the more important—in reference to tropical disease—subject of the morbid conditions of the Liver and Spleen. This is the truly valuable part of the present work, and well merits an attentive perusal by all who practise in warm climates. We have little doubt that the observations and researches of our author on these points will be quoted and appealed to by subsequent writers on the pathology of Indian diseases.

The leading idea, we may premise, that pervades all Dr. Webb's remarks on the morbid conditions of the Spleen, is that this viscus is essentially and most intimately connected with the formation of the Blood; and the important inference, which he deduces from this position, is that whatever serves to derange the structure and functions of this organ, must tend to vitiate the condition of the circulating fluid. He points out a variety of considerations, anatomical as well as pathological, in support of this view; laying the chief emphasis upon the well-known and established fact, that a general Cachexy—indicated by such characters as Anæmia, Scorbutus, Dropsical effusions, tendency to passive hæmorrhage and to gangrene—is the usual concomitant of a diseased state of the Spleen. Whether he may not have sometimes carried his favourite doctrine a little too far, as, for example, when he says "that we can cure the diseased condition of the blood, by restoring the normal condition of the spleen," and such like statements, may very fairly, we think, be questioned; but that his facts and reasonings are well calculated to direct the attention of

medical men to the (of recent years more especially) neglected subject of Splenic pathology, no one, who peruses his work with attention, will hesitate to admit. We propose in this article to follow him as closely as possible in his interesting researches, giving a condensed summary of what occupies about seventy pages in the original. Dr. Webb takes a rapid review of some of the most prominent opinions that have at different times been held as to the uses or functions of the Spleen. Like a good Catholic, he begins at the beginning.

Hippocrates regarded this viscus as the generator of the lymph or aqueous humour of the body; his words are: *Habet autem mulier et vir quatuor species humoris in corpore, e quibus morbi fiunt, qui non a violentiâ aliqua fiunt. Hæ sunt species; pituita, sanguis, bilis, et hydrops seu aqua:* . . . . *et sane sanguini fons est cor, pituitæ caput, aquæ splen.* According to this view of its physiology, the connexion of dropsical complaints with the existence of lesions of the spleen was readily accounted for. It is a curious fact that in the Hindoo medical writings—the antiquity of which is so great that it has been very reasonably conjectured that much of the knowledge of the Greek physicians was derived from them—the function of the spleen is alleged to be the preparation of, and more especially the addition of the red globules to, the blood.* Galen was much less fortunate in his conjectures on this subject: he supposed that the office of the viscus was "to attract the viscid and melancholic juices generated in the Liver." The Arabian physicians adopted with certain modifications this view of the question; but it is not to be denied that, however unmeaning much of their physiology undoubtedly was, their observations on practical medicine are often most truthful and accurate. In the rare work of Hali Abbas, who lived in the eleventh century, we find it laid down as a general position, that *whenever the spleen is enlarged, the body is emaciated;* the blood becoming at the same time thin and watery, and the extremities invariably cold. Avicenna has given a similar view of its functions and diseases. Dr. Webb remarks of his writings:—

"The main subject is first stated, as to the *office of the spleen* which is to 'free the blood from its heaviness and combustion.' This *sounds* strange, but its *sense* is precisely similar to what professor Schultz has stated, that the vesicles when burnt, or in his more modern phraseology 'when no longer capable of being acted upon by oxygen,' being 'old, *heavy* and useless,' they 'sink to the bottom,' in the vena portæ, and are excreted through the liver, or there reorganized. Liebig still more distinctly maintains this theory of combustion. Again, Avicenna attributes the natural and accidental black humours to this

* Dr. Webb gives a curious extract from the Sanscrit work "Sushruta," translated by *Baboo* Moodusoodun Gupta, the native demonstrator of anatomy in the Medical College at Calcutta. He remarks: "Not only is this extract valuable, because it proves that the Hindoos held this opinion, of chyle receiving its red colour in the spleen, and *there* becoming blood; the precise fact which I have all along been labouring to prove, but it is curious also as containing, perhaps the first distinct account in any language, of the existence of chyle; and both in this respect and in making the arteries the channels of its circulation, when perfected as blood, it is greatly in advance of the Physiology of the Greeks, who, with the exception of Galen, looked upon the arteries as air-vessels only."

combustion and heaviness. This idea is more definitely stated at p. 59 of this work. 'If the old deeply-coloured vesicles are not excreted from the circulation as new ones form, the blood assumes a darker tint, and the portal system is congested.'" 196.

Hewson, at the close of the last century, endeavoured to show that this viscus was connected, in some way or another, with the formation of the vesicular envelopes of the red globules;—a doctrine which has received not a little confirmation of late years by the researches of Professor Schultz of Berlin. This gentleman affirms that, "on a chemical examination of the portal blood, its *plasma* is found to be less in quantity, and more fluid, and to contain more colouring matter than that of ordinary venous blood;" and he adds that "in the vena portæ two things take place: 1, the old useless vesicles are taken out of the circulation; and 2, the debris or dead films of these vesicles are separated from the blood"—a doctrine not very dissimilar to that of old Hali Abbas, who expressly asserts that "it is the office of the spleen to clear off the muddiness and feculence (debris) of the blood." The opinion that the Spleen is mainly conducive to the preparation of the red globules of the blood has been adopted by several recent writers, as Bourgery, Donné, &c. The latter of these gentlemen has given the following description:—

"The globulines are the product of the chyle, which is continually being added to the blood. Three or four of these unite together, and whilst circulating with the blood, receive an albuminous envelope. They thus form the white globules. The white globules once formed, change little by little their forms; become flattened, coloured; granular matter in their interior becomes homogeneous or dissolved, and they are thus transformed into the red or proper blood-globules. The blood-globules themselves have only a passing existence; they dissolve after a certain time, and constitute the so-called *liquor sanguinis*. He says that certain substances, as milk, are capable of being immediately transformed into the blood-globules, by being injected into the blood-vessels, *and he regards the spleen as the organ more especially charged with the important function of the manufacture of blood-globules.*" 164.

The argument, derived from the fact that the Spleen has occasionally been extirpated, not only from some of the lower animals but even from man himself, without any apparent injury to life, does not weigh for so much as has been supposed; for we well know that the living system is endowed with extraordinary powers of compensation. It is rather by watching the effects of disease, than by the performance of rude mutilating experiments, that we can hope to arrive at any rational conjectures on the point at issue. Now "it is a fact," says our talented author," that spleen disease in this country, whenever it affects the young, is always followed by a dangerously disordered state of health, uniformly characterized *by a want of red blood.* We may conclude, therefore, that an uniform relation, as cause and effect, subsists between enlargement of the spleen and this state of the blood. For it is just as easy, in nine cases out of ten, where children are affected, to judge of the state of the spleen by the state of the palpebral conjunctiva, as to judge of the heart's action by the state of the pulse. If there be an increase and return of red vessels, the spleen is diminishing; if there be diminution of red vessels, the spleen is enlarging. This may apply more especially to the young, and I believe it does. But

the spleen, and the thymus too, may not be the less essential and important, should their chief function be to provide an increase of red particles of blood, commensurate with the rapid increase of all living organization in the young. It is therefore no logical conclusion to say the organ is of no use, because we cannot exactly discover, in what its use consists. The supra-renal capsules, the thymus gland, the thyroid and the spleen, may all have, at one time or other, an use, as well as the placenta; but which may not, at every period of life, be of the same necessity. Moreover, this view of its being designed to prepare red blood, seems borne out by other analogies; for women, who in this country have become completely chlorotic from long-continued spleen disease, nay even if it have resulted, as it does, in some young women, in general anasarca, yet will the whole of this disappear upon marriage, if followed by pregnancy, and sometimes it will never return. During this healthy activity of the system, the power of forming red blood returns, and the spleen regains its normal condition. Of this I have known some instances, besides the very curious case cited by M. Pinel, from the *Ephémérides des Curieux de la Nature.*"

The anæmic condition of a person labouring under Spleen disease bears a very striking resemblance to that of a chlorotic patient; and we need not remind our readers how remarkably deficient in red globules the blood of such a patient invariably is.* It is to be remembered, also, that disease of this viscus is almost uniformly accompanied with some malady or another that is more or less intimately connected with a vitiated state of the circulating fluids; such, for example, as dropsical effusions, passive hæmorrhages from various parts, scurvy, and spontaneous gangrene. Our author concurs in the opinion of MM. Piorry, Nonat, and other French writers, that splenic enlargement is invariably present in (he does not say, as the former of these gentlemen does, is *the cause* of) intermittent fever†:—

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* For an account of Andral and Gavarret's experiments, vide the numbers of the Medico-Chirurgical Review for April, July, and October, 1841.

† "Morgagni has demonstrated that these enlarged spleens result from fever—See Epist. xvi. n. 6, Epist. xx. n. 2,30 and 52, Epist. xxxi. n. 2, especially Epist. xxxvi. n. 1—where the 'spleen weighed eight pounds.' The internal parts of this viscus did not seem to differ from their natural constitution.—Externally both the sanguiferous and lymphatic vessels appeared enlarged, '*so that the lymphatics were discovered up and down through the coats of the spleen, and made a very beautiful appearance.*'

"His explanation of this morbid phenomenon—is full of sound reasoning and follows n. xviii., p. 200. 'For a viscus which is of itself lax, and cellular, and from which the return of the blood is slow, as it is to pass through the liver, before it enters the vena cava, is extremely liable to tumours, especially if that little share of strength which it has originally, being weakened by a disease of long continuance, and the blood being made inert and sluggish, some particles are left therein, which ought either to be corrected, or thrown out of the body'

"'For the sluggish motion of the blood being increased for these reasons, while, like muddy water beside its channel, it is diverted into the cells of the spleen, it of course deposits therein whatever corpuscles it may contain, which

"Of this fact, in paludal countries, we have abundant proof, in the classical work of M. Monfalcon. Indeed M. Piorry has also stated, that 'the frequency of hypertrophy of the spleen, in these fevers, is so great, that it was found to be present in 154 out of 161 cases.' I have observed it in every part of our dominions in the east. In India from the Sutledge to the Burampooter; from Cape Comorin to the Hymalaya; nay, even through Burmah, and the Malay peninsula, Penang and Singapore. In Calcutta it would be difficult to assemble half a dozen coolies without some of them, (perhaps half,) bearing the mark of the branding, which is so favourite a mode of treatment with natives;—and is derived from the Greeks and Arabs. At the annual invaliding committee also, among the gallant fellows who fought in China, I observed but too many instances of spleen disease, rendering the sufferers more helpless and miserable than their wounded comrades." 166.

Dr. Webb points out the inconsistency of not alluding to *spleen disease* in statistical medical reports (more especially in those of tropical maladies,) while so prominent an importance is invariably attached to *liver disease*. "Can there be a doubt," says he, "that the spleen is as liable to organic derangement as the liver?..... I verily believe that its morbid influence, although more slow, is equally sure." We may regard it as a fact beyond all dispute that, in almost every case of tropical fever, the liver and spleen —those two important organs of sanguification—are more or less seriously deranged in structure. Read what Major Tulloch says of the troops that returned from Arracan:—

"The appearance of the 44th and 54th Regiments, when they reached their respective Presidencies, exhibited a melancholy instance of the baneful effect of this climate, on the European constitution. Almost every soldier had immediately to be placed under hospital treatment: their countenances are described as of a dull saffron hue, their lips pale, their features swollen and œdematous, their abdomens tumid, and their whole persons apparently enlarged in bulk; *all were labouring under diseased spleen or derangement of other important viscera*, quite beyond the control of medicine. The only chance of recovery rested on a speedy return to their native country, but numbers died before that remedy was available, and of those who left Arracan, scarcely one-half were alive at the end of twelve months." 167.

Dr. Webb tells us that, among the troops that serve in Bengal, spleen disease and *consequent scorbutus* are a very frequent cause of invaliding and of death.

So intimate, in his opinion, is the connection between certain morbid states of the spleen and the induction of genuine scurvy, that he seems to consider the latter as a necessary result of the former. His words are: "Now if the spleen be as intimately concerned in forming red blood, as I have with much labour endeavoured to prove that it is, we have only to stop its functions, and we shall then produce scurvy. Thus scurvy is induced by disease of the formative organs of the blood-globules, as effectually as it can be, by withholding the materiel from which blood is formed;

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are heavier and more gross than the constitution can bear, and by this means, in part obstructing its own return, distends the cells of this viscus more and more. And the more the whole spleen is distended, by the distention of the cells, so much the weaker it is, and for that reason more liable to retain, in great measure, those fluids which afterwards flow into it.'"

—by feeding the animal man upon putrid meat, and bad grain, and washing down such a *pabulum vitæ* with stinking stagnant water. In either case the blood is not renewed; the body therefore feeds upon itself."

The most frequent of all the lesions of this organ, in tropical countries, appears to be enlargement with softening or *ramollissement* of its substance. The natives of India are very often afflicted in this manner; and in them the viscus is sometimes so much disorganised that it becomes lacerated by the mere effort of vomiting, by the slightest blow upon the side, or it may be without either straining or external violence. "Dr. Finch says, of the sepoys in Bengal, suffering from enlarged spleen—'occasionally, though seldom, it proves fatal by rupture, in which case death takes place suddenly, either at the commencement of the cold fit of an ague, or by even the slightest exertion of the invalid walking, it may be from his own charpoy (bed) to that of his comrades.'"

Mr. Greig has related the case of a patient who had had only two cold fits of an ague, and had walked out an hour before he died, yet in whom the spleen had become so distended and disorganised that it was found on dissection to have given way at several points, and to be so soft that it scarcely bore the slightest handling without breaking.

Our author lays it down as a general position—and the remark is one of great practical interest—that *ramollissement*, not of any one organ only but of the viscera generally, *is eminently the characteristic feature of Indian pathology*.

The substance of the spleen, as we have seen, is very often reduced to the consistence of a soft pulp or tarry fluid; the heart is sometimes so soft that it cannot bear its own weight without laceration; the lungs are not unfrequently in a similar condition; in the liver and intestines this morbid state is exceedingly common, and in the brain also it is of by no means rare occurrence.

Dr. Webb says that *the softened spleen seems sometimes to be evacuated by vomiting*; and he alludes to various cases in the way of illustration. Among these he cites one from the Observata Anatomica of Blasius (1674,) in which we read that—in a patient who had been for some time afflicted with a severe pain at the pit of the stomach, accompanied with distressing vomiting—the spleen was found on dissection to be almost entirely wasted away; nothing remaining in its place save some dark-coloured globules of various sizes. In a case recorded in the Bombay Transactions, the softened spleen seemed to be evacuated by vomiting: its disorganised tissue being found in the vomited matter. The patient recovered. (Such a statement as this must be received with some hesitation.)

The following case (recorded by Dr. Green in the Transactions of the Calcutta Medical Society,) where a direct communication was discovered to exist between the cavity of the stomach and a diseased spleen, may throw some light upon this point of pathology: it is moreover interesting in another point of view, as indicating the connection between splenic disease and a morbid state of the blood:—

"ULCERATED COMMUNICATION BETWEEN STOMACH AND SPLEEN, SPLENIC SCORBUTUS.

"A seaman, *disease* fever, with enlarged spleen, occurring at sea.—*Symptoms*, fever; petechiæ, which had appeared at sea early in the disease; liquid bloody

stools; enlarged spleen, swollen, spongy, ulcerated gums;—death on the 31st day after admission.

"*Post Mortem Examination.*

"*Head.*—Considerable effusion within the bag of the arachnoid, both superiorly and at the base of the brain; effusion between the arachnoid and pia mater: also largely within the ventricles.

"*Heart.*—In pericardium ʒj. of yellowish fluid—walls of right ventricle very thin, pale, and flabby; black liquid blood in all the cavities; in the right auricle was a separation of the blood into large whitish coagula, and a thin black liquid. *Liver.*—A small abscess, containing a thin pus, was found in it.

"*Stomach.*—A large ulcerated opening through its coats communicated with a large excavated ragged cavity in the spleen; the mucous membrane of the stomach pale; the edges of the ulcer thin, as if dissolved; a yellowish mucous within the stomach. *Spleen* enlarged, adherent closely to the stomach and to the abdominal parietes; the peritoneum, where adhered to, presented dark bloody spots of extravasation; the cavity or abscess in the spleen which appeared to be the result of ulceration—(an advanced condition of the state found in No. 2)—opened externally, on its surface, in several places. *Intestines.*—Mucous membrane of lower small bowels ulcerated, thickened, ecchymosed, and of a generally deep purple color; feculent contents. *Mesenteric glands* enlarged, hard. Lumbar glands hard, highly vascular, enlarged." 178.

In the majority of instances of fatal Hæmatemesis, no distinct rupture or laceration of the bloodvessels of the stomach is discoverable on dissection; the blood, it would seem, having oozed from numerous minute points. The most frequent concomitant appearances are the enlargement and other morbid states of the Liver and more particularly of the Spleen; and in short any abnormal condition, either of these or of the other abdominal viscera, that may impede or derange the circulation through the portal system.

One of the most interesting cases on record, in illustration of the pathological connection between a morbid condition of the spleen and the occurrence of Hæmatemesis, is one related by Morgagni in his 36th Epistle.

A young man, of a naturally robust constitution, had been in a weak and ailing state of health for two years, when at length a large and hard tumour made its appearance in the left hypochondrium; it caused a sense of weight in the part, and great dyspnœa, especially upon exertion. One day he was suddenly seized with a copious vomiting of blood: this attack was accompanied with great prostration, fever, and an increase of the swelling. The vomiting and fever, however, quickly ceased, and the patient was then put upon a course of steel, strengthening diet, &c. After three months' continuance of this regime, the hardness, but not the size, of the tumour was much diminished; the countenance of the patient was still pallid and of a citron hue. Two or three months subsequently, the vomiting of blood returned, and a smart attack of fever supervened; this proved fatal in the second week. The following were the appearances found on dissection:—

"The body being dissected, it was amazing what a small quantity of blood remained in all the vessels. And, for this reason, the viscera of the belly attracted the eyes by an unusual paleness, and almost whiteness, except the spleen, which preserved its natural colour; but this viscus was so much increased as to

exceed the liver in bulk, and weighed four pounds and a half. Yet it was not harder than it generally is, except that on its convex surface, in one or two places, was contained, deep within its surface, a substance of a very solid nature, of the bigness of a large nut. In the trunk of the splenic vein, polypous concretions lay hid, which divided themselves, together with the branches of that vein, in a very elegant manner, even within the spleen. The liver was very pale, except that here and there it was marked with black spots. The gall-bladder, which was more pale than the liver, and even whitish, contained a little bile of a very dilute colour, a similar bile to which was not wanting in the fundus of the stomach. The other parts of the belly were sound.

"In the thorax the lungs on their anterior surface were pale; but on the back part they appeared inflamed, and were of a black colour, inclining to purple: but, when cut into, they discharged a great quantity of frothy serum. In the right ventricle of the heart was only a small polypous concretion; and in the left only a beginning thereof." Epist. xxxvi. n. 11.

Bartolinus, also, has related some interesting cases of Hæmatemesis connected with an enlarged, or otherwise morbid, state of the spleen. In one of these, when sixteen pints of blood had been lost in the course of three days, the tumour in the left hypochondrium subsided, and the patient ultimately recovered. (Hist. anat. var. 1657.)

Before we quit the subject of the pathology of the spleen, we must briefly advert to a morbid lesion of this viscus that one would think must be of very rare occurrence, seeing that Mr. Twining has not even alluded to it in his valuable paper on the Diseases of the Spleen,* and Pinel seems to doubt whether it has ever been observed:† we mean—

*Abscess of the Spleen.*—It is a singular fact that this malady has been so much overlooked by modern pathologists; for it seems to have been perfectly well known not only to the early fathers of medicine (Hippocrates, Ætius, Aretæus, &c.,) but also to the physicians of the last century. One of the most curious instances that we know of is that related by Morgagni, in which an enormous abscess of the spleen seems to have been mistaken for an ascitic swelling. The operation of paracentesis had been twice performed, and a large quantity of pus had escaped from the puncture instead of water. The patient died on the day after the second operation; and on dissection the spleen was found to be so much enlarged, that it reached from the left hypochondrium down to the pubes, covering the viscera in front and on the sides. When opened, it was discovered to contain as much purulent matter as had been drawn off during life. After relating these particulars, Morgagni adds: "that pus indeed, as well as water, has been sometimes found in the spleen, I have taken notice to you before; but I do not remember that it has been ever found in such an immense quantity. In so great an extension of a viscus, which is not large, and a sensation of a fluctuating fluid, who would have blamed the spleen in particular? The seat of the pain, except in the beginning perhaps, could not have shown this."

In Van Swieten's Commentaries, also, there is an instructive case com-

* Transactions of the Calcutta Medical and Physical Society.
† Nosographie Philosophique, tom. ii, p. 501. 1818.

municated by De Haen, in which the Spleen was found to contain "a thick, white, and abundant matter; a great quantity of the like matter floating about in the abdomen."

Dr. Webb has related a case headed, "Abscess of spleen bursting into the intestines, with recovery of the patient." Such *may* have taken place; but the details scarcely warrant an absolute diagnosis. After recording another instance of (presumed) splenic abscess, he makes the following remarks in reference to it:—

"How did the spleen so rapidly decrease in a single night?

"It seems to me probable that it had burst on the 18th, and that the matter, pus, and flakes in the pelvis had come from it. It had healed when the lymph was effused. The fact of its being felt immensely large two days before the purulent purging came on, is known to my friend Dr. Sprenger who saw the case with me—that it could not be felt two days after is also known to him. There may have been also a metastasis to the colon—such is not an uncommon attendant upon splenic suppurations." 154.

In order that we may give a practical character to some of the facts which we have brought forward touching the pathology of the spleen, we shall here devote a page or two to the consideration of the *treatment* that promises most benefit in one form at least of hypertrophe of this viscus: viz: that which is associated with softening of its substance, and which occurs not unfrequently in agues and other febrile diseases of hot climates.

While fully admitting the intimate connexion between enlargement of the spleen and protracted intermittent fevers, we should be on our guard not to carry this pathological doctrine too far, as M. *Piorry* and some other continental writers have surely done when they have contended that the morbific miasm acts primarily on the spleen, and that the fever is the result or effect of the visceral lesion. The extravagance of many of that gentleman's assertions will prove their best corrective; for who can possibly believe with him that the spleen may be sensibly diminished in size, in the course of a single minute, by the administration of large doses of quinine; or that this remedy is useful in those cases *only* of typhoid and other fevers, in which there is some affection of the spleen present? Yet several medical men have (for a time, at least) given credit to these astounding assertions. M. Gouraud* for example, tells us that, after having witnessed the practice of M. Piorry at La Pitié Hospital, he felt fully satisfied of the correctness of the statements now made; but that, having repeated them at the Hôtel Dieu in the service of M. Rostan, he found that the same results were obtained by the use of various other means besides quinine—a circumstance that made him suspect the correctness of the interpretation given by the "grand plessimetriste." In prosecuting his inquiries a little further, he satisfied himself that there was no actual diminution of the spleen in those cases where the shrinking had seemed very rapidly to take place; but that this viscus was merely *refoulée* by the stomach that had become distended with wind, and that the greater resonance then perceived, on percussing the left hypochondriac region, was altogether attributable to this simple cause!

M. *Nonat*, one of the physicians of La Charité Hospital, has taken a

* Journal des Connoissances Medico-Chirurgicales, Dec. 1844.

much more sober view of the question under consideration than his brother of La Pitié. He expressly says: "We will not affirm that hypertrophy of the spleen produces intermittent fever; this has its *point de depart* in some unknown cause, whether of the nature of miasm or otherwise, and inappreciable in its nature; but certainly it cannot be denied that such hypertrophy is an occasional and predisposing cause, which keeps the system under the influence of this primitive agent."* M. Nonat, following the example of M. Bally, urges the importance of administering very large doses of the quinine,—from 12 to 40 or even 50 grains in the course of the twenty-four hours—in those cases of ague that are accompanied with enlargement of the spleen. Its use should not be discontinued, until the viscus has resumed its normal dimensions.

Dr. Levy, one of the physicians of the Val de Grace hospital, has satisfactorily shown the superior efficacy of full doses of quinine over every other remedy in those dropsies that so frequently supervene upon agues, and which are so generally connected with enlargement of the spleen. † Dr. Bouyer ‡ very justly remarks that it is not by depletory means that we should endeavour to reduce the size of the enlarged spleen, but rather by fortifying the general system, and promoting at the same time greater activity in the transit of the blood through the abdominal circulation. For this purpose the exhibition of bark and steel, the use of salt-water baths, of friction over the left hypochondrium, and the constant use of a flannel belt around the abdomen, and perhaps, also an *emplastrum ammoniaci cum hydrargyro*—with which a scruple or half a drachm of quinine has been blended—to the affected side, are the most efficient remedies. He is unfavourable to the use of even local blood-letting, but thinks that dry cupping over the left hypochondriac region may be serviceable.

Dr. Morehead of Bombay has recently made some similar remarks upon this subject §:—

"The complication," says he, 'of an enlargement of the spleen is so common in cases of obstinate intermittent fever, and has been generally so much the object of special attention in practice, that it would be an omission here not to allude to it; yet I do not think that it calls for any great deviation from the general principles of treatment which I have endeavoured to lay down. In cases in which the vigour of the constitution has not been much impaired (and such are not very common,) the mode of treatment of enlargement of the spleen by repeated small leechings, and the regular exhibition of aperients with sulphate of iron and quinine, as recommended by the late Mr. Twining of Calcutta, is, I think, very applicable; but I doubt its suitableness in cases, in which the cachexy has proceeded far, for in many of these it has seemed to me that the enlargement of the spleen gives place as the general health improves. ‖ In fact,

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* Vide Medico-Chirurgical Review, No. 65, July, 1840.

† Vide Med.-Chir. Review, No. 66, Oct. 1840. ‡ Ibid. 69, July, 1841.

§ Transactions of the Medical and Physical Society of Bombay, No. 6, 1843.

‖ In his recently-published *Traité Elementaire et Pratique de Pathologie Interne*, Vol. II., 1845, M. Grisolle, after remarking that enlargement of the spleen often rapidly subsides, when it is a concomitant of fever, observes: "if, on the other hand, this lesion is slowly developed and is not accompanied with pyrexial symptoms, and if the viscus is hard and voluminous, quinine, in whatever doses it may be administered, is utterly inefficacious. I have often seen M.

to improve the health by small doses of quinine with half-a-grain of sulphate of iron, and a few minims of diluted sulphuric acid thrice daily, to have recourse to pure air, appropriate light, nourishing diet, and the use of the compound rhubarb pill as a laxative when required, has seemed the best mode of management."

Dr. Webb also bears testimony to the excellent effects of large doses of quinine in the anasarca and general cachexy that so generally accompany enlargement of the spleen. "I have," says he, "found half-a-drachm of quinine, given daily to a child four years old, remove the enlargement of the spleen in ten days. It has the advantage of being perfectly safe in the hands of any sensible person. There is no necessity for debarring children from play and exercise."

The injurious effects of depletory measures, in such cases as those we have been alluding to, are strikingly shown in one of the reports of our author, headed, "Anasarca and Enlarged Spleen treated with Mercury." The treatment in this case seems to have been anything but judicious; the result was fatal. We are tempted here to suggest a remark that has occurred to our minds more than once during the perusal of the present volume. Is it not the case that some of our East India brethren are in the habit of carrying the lowering system rather too far even in acute diseases, and of employing it in a good many instances where any form of sanguineous depletion cannot but be, we should think, hurtful? In the very next report to that which we have just quoted, the disease seems to have been one of remittent fever, of several days' standing, unaccompanied by any symptoms of decided local inflammation; yet the patient was bled to sixteen ounces, and fourteen grains of calomel were given immediately afterwards, followed too by purging draughts, and leeches to the temples, on the day preceding his death. The collapse was very rapid. On dissection, the lungs and heart were found to be pale and bloodless; the liver was enormously enlarged and gorged with blood; the spleen too was soft and congested with a thick tarry-looking blood. We may mention also that the blood, that had been drawn, was neither cupped nor buffed. Is it not therefore somewhat of a misnomer to designate such a case as this an "inflammatory congestion of the spleen?"

From the consideration of the spleen we pass on to that of its neighbour, the Liver; our remarks, we may premise, being confined almost entirely to the subject of Hepatic Abscess. There is no disease, Dysentery alone excepted, so common in the East Indies, as inflammatory affections of the Liver—"the largest and most vascular organ in the body." If we bear in mind the enormous supply of blood to this viscus, we must at once perceive the urgent necessity of prompt and very copious bloodletting in all active inflammations of its parenchymatous substance. The shrinking or subsidence of the hyperæmic gland in the right hypochondrium after an ample bleeding is often very remarkable. According to

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Chomel give 15 or 20 grains daily for eight or ten days without producing any effect on the splenic enlargement; and of late years I have exhibited it in still larger doses, and occasionally combined with steel; but I have never been able to determine the slightest diminution in the size of the swelling."

M. Piorry, "this diminution of the hepatic organ varies from one to three inches from above downwards in twenty-four hours." Dr. Murray, the late Deputy Inspector of H. M. Hospitals, lays down the following peremptory rules for the guidance of the Indian practitioner:—

"In the treatment, chief reliance is to be placed on v. s. *carried to syncope* at the very onset, and repeated at intervals not exceeding twelve hours, till the acute symptoms yield; very rarely are more than three bleedings requisite: but in very dangerous cases, I have required to repeat it five times (*to syncope, or till the pain ceases*) before the disease was sufficiently subdued to render the patient safe. This rule I consider the only true criterion, in severe cases, by which we can be guided as to the quantity of blood the constitution will bear to lose, and the disease require to be taken. The effect of bleeding to sixty or fifty ounces at once, in the commencement, is most satisfactory in subduing alarmingly dangerous symptoms; and I never saw any unfavourable consequences from it. One small bleeding afterwards—still to fainting—or leeches, are in general found sufficient to remove any remaining acute morbid action." 109.

In unfavourable cases, the inflammatory action often passes very rapidly into the suppurative, and a large portion of the hepatic parenchyma becomes thereby broken down, within a short space of time, into a soft pulpy purulent mass, without any circumscribing sac of membranous deposit between it and the intact portion of the liver. We need scarcely add that such diffuse abscesses are always much more dangerous than those that are confined within a cyst. Absorption of the purulent matter cannot take place;* and, if an artificial opening be made into the abscess, "the admission of air," says the author, "into the undefended and disrupted tissues of the organ can only be followed by sphacelus and death; —whilst it is to be regretted that, during life, there exists no satisfactory indication of the state of the abscess in this respect, whether it be encysted or not."

It is the opinion of many experienced practitioners in India, that *abscesses in the liver may and do remain stationary in many cases for years.* The only information that our author furnishes on this head is in these words:—

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* Mr. Webb quotes, with deserved commendation, the following most just and lucid remarks by Dr. Copland:—

"The functions of the membrane lining abscesses are not confined to the containing and isolating the purulent matter, so as to prevent the contamination of the adjoining structures. Owing to the absorption and exhalation proceeding in its surface, the contained fluid is continually renewed, its qualities are modified, and its decomposition prevented. It is not altogether removed from the influence of life, but participates in the vitality of the surrounding textures, all fluids accumulated in organised parts do, though in a feeble and obscure degree. M. Dupuytren remarks, that it is through the medium of this living envelope that the matter contained in abscesses is augmented and diminished in quantity; is thickened, or rendered more fluid; or is occasionally changed by substances absorbed or injected into the circulation. It is because the cysts of abscesses are connected by an intimate sympathy with the chief centres of vitality that the excitation of the more important viscera affects them in so marked a manner; and that remedies, judiciously applied to these viscera, often tend to promote the absorption of the matter they contain."—*Dict. of Pract. Med., p.* 13.

"Such is my own opinion, and that of other surgeons in this country, both civil and military, who have had much greater experience. Our worthy president of the Medical and Physical Society, Mr. Egerton, has repeatedly expressed himself to this effect: so also has Dr. Murray, whom I have already quoted, nor is such a supposition, in any wise, inconsistent with what is observed of encysted abscesses located elsewhere, nor with the opinion of Dr. Copland, of their contents participating in a modified vitality, dependent upon the adjacent structures." 111.

The treatment of Hepatic Abscess is a subject of the highest interest to the East India practitioner, as the disease is one of such frequent occurrence in tropical countries. In not a few instances, Nature effects a cure either by eliminating the purulent matter in the way of absorption, or by discharging it through some outlet, as the bowels or even the lungs; and the patient will occasionally recover from so serious a lesion. It is rare, however, that things terminate so favorably as they did in the following "case of abscess in the liver spontaneously evacuated by the air-passages and bowels." A gentleman had two attacks of acute hepatitis, one following the other, within the space of a month. On the 13th day after the commencement of the second invasion, "a sudden change for the better, in the character of the symptoms, took place. He felt himself all at once relieved, and was sensible of something having given way within him. On examining his motions next day, a very considerable quantity of purulent matter was discerned in them, and in those he passed for several days after, which sufficiently warranted the opinion that had been held, of an abscess having been formed in the liver. For ten or twelve days after this, he improved considerably, when another return of the symptoms took place. The same remedies were employed as before, together with anodyne fomentations, with the same want of success; he got daily worse; and serious apprehensions regarding his recovery were entertained—when, on the 4th of October, he experienced another sudden change for the better. But this abscess being higher situated in the organ than the former one, burst into the *thorax* instead of the *colon*, and the matter was discharged by expectoration. Ever since he has continued to get better; and nothing further was required than a careful attention to the state of the bowels,—keeping them open by mild aperients and emollient clysters, —improving the strength generally by demulcent tonics and a strictly regulated diet,—and allaying nervous irritability and procuring sleep by means of night-draughts containing the acetate of morphia.

"A few days ago he felt some uneasiness in the right side: the cupping-glasses were had recourse to, but as he could not endure them, leeches were applied in their stead, and with a very good effect. He is now recovering rapidly."

Our readers are probably aware that a much more active method is adopted now-a-days, in the treatment of nepatic abscesses, than was deemed safe or warrantable a few years ago. Dr. Webb is a zealous advocate of the practice not only of early puncturing these abscesses and evacuating their contents as speedily as possible, but also of ascertaining the state of the liver by means of a *small exploring* trocar, as recommended by Dr. Murray, the late Deputy Inspector of Hospitals in India, Dr. Monat, and other surgeons of the Madras army, to whose skill and enterprize the pro-

fession is indebted for "this most important improvement in the treatment of hepatic abscess."

Before alluding to it more particularly, let us briefly review the opinions of some of the old physicians on this point of practice. That Hippocrates was in the habit of opening abscesses of the liver, either with the knife or the cautery, is well known to the classical reader. His description of the disease and the mode of its treatment is altogether so graphic that many of our readers, we doubt not, will be pleased to have it presented to their notice.

*Quum in latere tuberculum* fit, tussis emergit dura, et dolor, et febris, et gravitas in latere incumbit, et dolor acutus in eodem semper loco urget, et sitis vehemens, et calidum potum aversatur, et in dolens latus decumbere non potest, sed in sanum. At ubi decumbit, velut lapis impendere ipsi videtur, et intumescit, et rubescit, et pedes intumescunt: hunc secato aut urito. Postea pus emittito usque ad decimum diem, linamento ex lino crudo indito. Decimo autem die, pure omni emisso, vinum et oleum tepida immittito, ut ne de repente resiccetur, et linamento et linteolo utitor; ubi vero id quod infusum est emiseris, aliud: atque hæc per dies quinque facito. Postquam autem pus tenue effluxerit, velut ptisanæ ac modicum ad manus contactum, stanneum penicillum indito; et, ubi penitus resiccatum fuerit, linamento semper modice præsecto, ulcus ad linamentum coalescere sinito.—De Morbis, Lib.* II.

Aretæus (A. D. 81) recommends that an hepatic abscess should be opened with a red-hot knife, which *et secat et comburit.*†

This practice Baron Larrey followed on more than one occasion in his Egyptian Campaign with success.‡ He probably found it in use among the Arabs. It still exists among the native doctors in India.

Celsus says that, "Abscess in the liver is to be treated like other internal suppurations. Some open it with a scalpel and cauterise the vomica."

Galen (who died A. D. 200) introduced the digesting process, which was afterwards so generally practised in Europe; he condemns opening abscesses of the liver very early—*non expedit incidere protinus; sed digestionem moliri medicamentis ad id valentibus.*§

Hali Abbas (whom we have already quoted) lays down precise directions for opening hepatic abscesses with the cautery knife; and Albucasis (who lived about a century later) has given the following description of the mode of performing the operation:—

"*Quando acciderit in jecore tumor, et scire cupias si is tumor fuerit in carne jecoris, vel in tunica ejus: equidem si fuerit in carne jecoris, invenies infirmum gravitatis sensu, et dolore minime acuto laborantem. Quodsi sit in tunica jecoris, cum dolore erit acuitas fortis, (dolor erit acutior valde:) Porro, si videris, quod curatio ejus fatigavit medicos, oportet ut infirmus decumbat in posticam cervicis partem (resupinus); tum signabit locum Apostematis cum atramento; dein calefac cauterium specillo simile, et hæc est ejus forma;* (a drawing of the instrument is

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* *Phyma* (φυμα) *tuberculum*, generaliter dicitur omnis tumor p. n. erumpens; comprehendit igitur abscessus.—*Castelli Lexicon.*

† Medicæ Artis princip. H. Stephani, 1567, Lib. I. p. 32.

‡ Clinique Chirurgicale, tom. ii. p. 448-9.

§ Method. Medendi. Lib. XIII.

here given)—*et ures cum illo ure ustione, donec cutis tota usta sit, et cum cauterio perveneris usque ad membranam adeo ut exire facias omnem materiem purulentam. Postea curabis curatione abscessuum donec sanetur.*"* 116.

In Van Swieten's Commentaries on the aphorisms of Boerhave, we read thus :—"the tumour of the liver, properly held or secured, is to be opened either by seton, actual cautery, caustics, or the lancet; and the wound made is to be afterwards gently corroded or enlarged to a greater depth by suppuratives and escarotics, until it extends to the vomica or abscess.' . . . . . "But since delays are dangerous in the present malady an incision is evidently to be preferred to the caustic."

The trocar appears to have been first used for the opening of hepatic abscesses in the latter half of last century. Vogel† and Benjamin Bell‡ are amongst the earliest authors who recommend it.

Of recent years, M. Recamier and other French practitioners have preferred the use of the caustic potash to that of the knife or trocar for the purpose alluded to; while Dr. Graves of Dublin has very ingeniously suggested,—with the view of inducing an adhesion between the diseased viscus and the abdominal parietes, and of preventing the risk of extravasation into the abdomen—that an incision should be made over the most prominent part of the tumour, and carried through the abdominal muscles, so as to reach without dividing, the peritoneum: by the subsequent application of poultices, &c. the tendency of the matter to come to the surface is rapidly promoted.

This method of treatment is doubtless too slow for the exigencies of East India practice, in which, unless prompt and almost immediate relief be given, the patient will too often rapidly sink.

We shall now adduce the reports of two or three cases of Hepatic Abscess detailed in Dr. Webb's interesting collection, with the view of illustrating some of the points to which we have alluded.

*Case* 1.—A middle-aged soldier, who had been 14 years in India, was received on the 21st March, 1839, into the hospital with symptoms of acute hepatitis. On the 23rd he had cold shiverings, followed by profuse sweats. On the 30th, Dr. Murray, suspecting the existence of an abscess, introduced a trocar, to the depth of an inch and a half, at the lateral part of the thoracic arch, between the eighth and ninth ribs. *About an ounce of very black blood flowed out by the canula, but without any admixture of pus.* A second puncture was made a little more anteriorly and deep, under the cartilage of the eighth rib: *this gave exit to more black blood*, and afforded great ease; but *still no pus flowed*. Tents of lint were introduced into the wounds, and large poultices applied over the side. The symptoms of suppuration continuing, Mr. Wilkins, the regimental surgeon, "having (we copy his report) a strong idea that the common trocar, had been too short, on the 5th April *introduced the one for puncturing the bladder by the rectum*,

* *Channing's* Albucasis, Oxonii 1778, p. 61, vol. i., Sect. xxviii., de tumore jecoris cauterio perforando.

† Prelectiones de cognoscendis Morbis. Edit. Gotting. 1772, vol. i. p. 176.

‡ System of Surgery, vol. v. p. 393, 5th edition.

which being curved and longer than the other, reached the abscess, and gave vent to a quantity of sanious purulent matter, (about four ounces), to the great delight and relief of the patient sufferer. *On the 11th the long trocar was again introduced* as the discharge had stopped—the punctures were kept open by tents—antimonials, and hydriodate of potass were administered—the discharge soon became healthy pus, which gradually lessened in quantity until it finally ceased on the 10th May, when the wounds became so contracted that the tents could no longer enter, and soon finally closed. The liver resumed nearly its natural size, pressure could be borne without giving pain, the patient's health gradually improved, and he was discharged on the 7th of June; since which time he has been in the performance of all his military duties (now two months), without having required to come back once to the hospital for medicine."*

*Case* 2.—A soldier, æt. 33, had for about a month been affected with cough, dyspnœa and hectic fever, accompanied with obscure symptoms of Hepatic suppuration. "The right *rectus* muscle was more tense than the left, or rather it became so on attempting to examine the tumour, as if to screen it from pressure, which Mr. Twining gives as a characteristic symptom of central abscess of the liver." Such being the case, Dr. Murray resolved (March 2d) to ascertain the state of the organ by puncturing the most prominent part of the fulness with a trocar: but nothing save a little blood flowed out when the stiletto was withdrawn. "Not satisfied with this exploration, I pushed the new exploratory instrument into the Liver, behind the middle of the side, between the 8th and 9th ribs, when, to our satisfaction, pus flowed: not however through the tube of the instrument, but by the side of it—apparently from my having gone beyond the abscess.

"I then withdrew the explorer, and introduced a large sized flat trocar, by which eight or nine ounces of thick curdy pus were evacuated. When the evacuation was nearly completed, a gurgling of air took place through the canula, apparently from the action of the Diaphragm, and a cork was then fitted to the canula (which was retained *in situ*) with directions to take it out at mid-day and in the evening, to allow accumulated matter to escape. A bit of sticking-plaster was applied over the orifice of the first puncture in the Epigastrium."

The symptoms were considerably relieved by the operation for two or three days. On the 5th, "Dr. Murray made another explanatory puncture into the liver on the right side of the Epigastrium, without finding pus; but a quantity of serous fluid was evacuated from the cavity of the abdomen, on withdrawing the canula out of the Liver." He died on the 13th.

*Dissection.*—Before opening the body, the exploratory instrument was pushed into the liver near the end of the eleventh rib, when thin yellow pus issued freely through its canal, shewing it had entered an abscess. When the abdominal parietes were divided, the liver was found to be enormously enlarged: it adhered firmly, by recently-effused lymph, to

* Madras Quarterly Medical Journal, Vol. 2.

them, where the two punctures had been made in the epigastric region, nor were there any signs of inflammation of its parenchyma where the trocar had entered. "It was found that the exploratory instrument, which before dissection was pushed into the liver, had entered a large distinct abscess situated in the right side of the concave surface of the gland, which had very narrowly escaped being penetrated in the exploration made on the 5th instant. Its area was considerably larger than a man's fist, and it contained upwards of a pint and a half of thick yellow greenish pus.

Immediately above this abscess, was the empty contracted sac of the one opened and evacuated on the 2nd March: the inner surface of it had a dark gangrenous appearance, which extended throughout the course of the wound.

"At the centre of the upper convex part of the liver was a third distinct abscess, *the largest of all*, containing nearly 3 pints of matter, which seemed not only the chief cause of the projection of the organ beyond the ribs, by its pushing it downwards; but also of the projection of the diaphragm into the right cavity of the chest: it pushed the diaphragm as high up as the 4th rib. The upper part of the walls of this abscess adhered extensively to the diaphragm; as did those of the lowest abscess to the cellular substance and other parts above the right kidney."

In the clinical remarks which Inspector Murray appends to the history of this case, he observes:—

"After having seen this dissection, I would hereafter explore to a greater extent any analogous case; and I am, moreover, of opinion, that all our punctures should be made from the abdominal cavity—entering the trocar or explorer under the edge of the cartilages of the 7th, 8th, or 9th ribs, as circumstances may indicate. We may often indeed get nearer to the abscess through one of the intercostal spaces; *and I think primary exploration may sometimes be advantageously made in this situation by a very minute flat canular instrument*; but, from not having seen any patient recover where the matter was evacuated in this direction (through the diaphragm); from finding that the action of the fibres of the diaphragm impedes the free discharge of the matter, somewhat like a valve; from observing that air sometimes enters the wound when made here; and from considering that the opening is not so dependant through the walls of the thorax as when made through the abdominal parietes; I beg to recommend the latter mode in *all cases*; and I must also say that I would prefer a long flat trocar to any other instrument, as the stilette can be withdrawn occasionally during the operation to ascertain if any abscess has been penetrated; and the canula can be left in *situ* afterwards, if thought desirable." 102.*

In another most unfavorable case, Dr. M. drew off more than *nine pints* of thin flaky purulent matter; the canula was left in the liver with the view of allowing the matter to drain off as it formed. The operation was more successful in the case related by our author in a subsequent page (130): on that occasion, about a pint and a half of thin brown matter came out on withdrawing the stilette, and the canula was left in the wound.

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* Madras Quarterly Medical Journal, vol II., p. 232.

In the following one, a cure was effected by the use of the seton.

*Case.*—A soldier, æt. 24, was seized with all the symptoms of acute Hepatitis, on the 14th July, 1839. Although the active symptoms were subdued by antiphlogistic treatment, an abscess eventually formed in the liver. On the 13th of August, a month from the date of his admission into the hospital, an incision was made down to the peritoneum, an inch and a half below the margin of the ribs, and a seton inserted. In the course of a few days, a copious thick, green, and fætid purulent discharge escaped from the side of the seton, and the enlargement of the liver was very manifestly diminished. On the 27th, the report states that there was a slight natural discharge from the seton, and that the size of the liver was nearly reduced to its normal condition. In other three weeks the patient was declared convalescent. The following practical remarks are appended by the narrator, Dr. John Murray, to the preceding history*:—

"In this case I am confident abscess existed before the patient's last admission; and had the swelling not been so near the situation of the gall-bladder, a preparatory incision down to the peritoneum would have been made on the 17th of July; but having seen a distended gall-bladder as large as the tumor then was, and finding that it diminished by the means used, I was induced to defer the operation. Irregularity in diet caused a relapse. After which there was no doubt in the diagnosis, but as the effect of internal remedies had been so satisfactory in the first instance, they were again tried. After I made the incision into the integuments and inserted the seton for the purpose of bringing on adhesion between the liver and peritoneum, the tumour again diminished in such a manner as to induce me to delay making any puncture; and on the afternoon of the 27th August the abscess burst through the part where the incision was made, and where adhesion had evidently taken place; after which the patient's restoration to health has been progressive, and I have no doubt of a favourable termination.

"The abscess should have been punctured on the 15th or 16th of August, and though the delay led to no unfavorable consequences in this case, I by no means recommend my example to be followed; for when the walls of the sac become thin, there is no knowing when and where it may give way, and if the abscess had burst into the cavity of the peritoneum, the patient would have inevitably died, and I should have been to blame for indecision in my practice, after the light which has lately been thrown on this subject." 130.

We take leave of Dr. Webb with the highest esteem for his talents, and look forward with pleasure to the appearance of the second part of his Pathologia Indica. It contains more valuable matter in its small compass than a dozen of the ordinary run of medical works, that now-a-days issue from the press in this country.

* Madras Journal, Vol. III., p. 275.

**Practical Remarks on some Exhausting Diseases, particularly those Incident to Women.** By Sir *James Eyre*, M.D., Physician to the St. George's and St. James's Dispensary. 8vo. pp. 75. Churchill, 1845.

The chief object of this little modest brochure is to extend the use of a comparatively modern remedy to many complaints for which it has not hitherto been prescribed. The readers of this Journal are aware that, twenty or thirty years ago, the nitrate of silver was seldom exhibited except in obstinate cases of epilepsy—and that with a trembling hand and sceptical mind, lest the patient should turn blue and still retain the malady! This impression greatly limited the employment of the remedy which, however, gradually extended to a number of gastric affections rebellious to other medicines. It is only a very few years since another preparation of silver was introduced into practice recommended as not likely, or not capable of tinging the skin, viz., the oxyde of silver. This has been exhibited with more freedom, and with less fear. But we may state, en passant, that we have seen a case where even the oxyde has slightly tinged the skin of a delicate female who had taken the preparation three or four months. It is rarely necessary, however, that such protracted exhibitions should be employed, except in epilepsy, the generality of other complaints only requiring the remedy for a few weeks.

The author, who is a shrewd and observant practitioner, and has opportunities very nearly as great as the physicians of metropolitan hospitals have, for testing the efficacy of remedies, has furnished his professional brethren with a very plain and unpretending record of cases treated at the Dispensary—chiefly pyrosis, gastric disorder, slowly exhausting hæmorrhage from mucous surfaces; "but above all, atonic hæmorrhagia, which, though arising from various causes, and hence often perplexing to the practitioner, will, it is confidently predicted, become henceforth, as amenable to treatment as it has been hitherto unmanageable." After referring to preceding writers—chiefly Lane, Serre, Golding Bird, Clendinning, &c., Sir James proceeds to pyrosis, pronounced by Baillie to be one of the *Opprobria Medicorum*:—

"Whatever opinion be the correct one, the pathological conditions being so obscure, it will be found, that however it may be induced, the oxyde of silver given in half-grain doses thrice daily, will prove more effectual in its cure than any medicine which has yet been employed. That it has not once failed in the author's hands, let the following illustrative cases, a few of many, bear witness; all the patients were women. It should be premised, however, as costiveness generally existed, that one or two of Dr. Hamilton's pills (of Edinburgh) composed of Ext. coloc. c. ℈ij., Ext. hyoscyami ℈j., divided into xii., were given every night." 6.

Ten cases are detailed illustrative of the efficacy of the remedy, one or two of which we shall glance at.

*Case* 1.—M. B. aged 30, married, has suffered from pyrosis for sixteen years. No tenderness of epigastrium on pressure. A quarter of a grain

of the oxyde of silver thrice a day, with proper dietetic instructions. In less than a fortnight the symptoms were removed; but she relapsed on eating improper food. A return to the oxyde soon produced ease, and she continued well.

*Case* 2.—"E. D. aged 23, single; sempstress. Sept. 14th, 1843. Had been ill two months, bringing up a pint or more daily, of a tasteless watery fluid; could not bear pressure; ordered to apply a dozen leeches to the pit of the stomach, and the bowels being confined, to take the colocynth pills. On the 18th, the tenderness having subsided, began with the oxyde. 21st, nearly well. Oct. 2nd. Still improving: desired to try the following tonic mixture: ℞ Acidi hydrochl. d. ʒj., Inf. chirayitæ ʒviiss., Tinc. card. c. ʒss Ft. mist. Coch duo ampla ter quotidie. Nov. 1st, slight return of pyrosis: directed to resume the powders, which in eight days removed all her ailments; and in Sept. 1844, she called, and stated that, during the past year, there had been no return of her complaint." 10.

*Case* 3.—M. S. ætat. 41, married, Nov. 20, 1844. Had suffered great pain in her stomach for six years, which pain had lasted, at one time, for a year and a half without intermission. Bowels open—no epigastric tenderness—frequent inclination to vomit. Was desired to restrict herself as much as possible to a milk diet. In six days she was so much relieved by half-grain doses of the oyxde thrice a day, that, to use her own expression, "she felt herself quite another person." By the 31st Dec. all medicine was left off, she being well.

Our author next adverts to the remedy in hæmoptysis and hæmatemesis. Passing over some ingenious theoretical and practical observations, we shall allude to a few cases of hæmoptysis in which the oxyde of silver was employed.

*Case* 1.—J. T. aged 22, in the Kent-road, applied on the 9th of March, 1842, having had occasional attacks of spitting of blood for eighteen months past. He had cough—emaciation—no rigors—pulse 85 and weak—bronchial respiration, with mucous râle—dulness under the right clavicle—no hereditary disposition to phthisis. Hæmoptysis, more or less, had now continued regularly for three months. He was ordered to keep very quiet, and to take one grain of the oxyde, with ten grains of the comp. powder of tragacanth ter die. "The bloody discharge, from this time, gradually diminished, and on the 19th of April, he had gained flesh and looked much better." His cough was greatly relieved—appetite good—sleep refreshing. Was ordered quinine and sulphuric acid, with gentian. From this time he ceased to attend the Dispensary.

After detailing several cases of hæmatemesis and hæmoptysis, our author concludes thus:—

"On a review of these few cases, whether of hæmoptysis or hæmatemesis, enough has been detailed to evince the great power of our remedy, and, although the author is not so insane as to profess to cure tubercular phthisis, he may be considered, perhaps, to have been useful in his generation, by the endeavour to push into light an additional means of arresting pulmonary hæmorrhage, though only for a time, and thereby relieving the pitiable distress of patients and their friends, caused by this dreaded symptom; and, though the good that we do be not permanent, we may yet, on the score of humanity, perchance, propitiate that

eminent Parisian physician, M. Velpeau, who, in an 'Essai sur les Tubercles,' published, not many years ago, in the French metropolis, says, 'Angli ipsi superbi, illi æmulatores, qui se nobis præstare semper contendunt, quique nunquam vel pares esse potuerunt, ne quidam duas ideas inter se cohærentes, hâc de quæstione ediderunt.'" 31.

*Uterine Hæmorrhage.*—Our author glances most rapidly at those means which have hitherto been considered useful in restraining this species of the profluvium, when it continues for weeks or months after parturition—after menstruation, and under other circumstances. These opinions and authorities we need not review. A series of thirty-one cases of mænorrhagia is briefly detailed by the author, of which we can only take one, without any selection.

*Case.*—"J. M., aged forty. April 3rd, 1842. Married seventeen years; no family; the catamenia, which were always regular, and never profuse, had first appeared at the age of twelve. Had now been afflicted for three months, in an extreme degree, and the discharge had been unusually profuse the day before she applied for relief; her pulse was feeble; there was no bearing down, nor pain, That the flow under these circumstances might be checked gradually, the minimum dose of the medicine was prescribed; after two days there was an amendment, in a week the hæmorrhage, for such it was, had nearly ceased, and in another, entirely disappeared. The patient having remained free of all complaint till the end of May, was then dismissed cured." 45.

The following is the concluding passage of this little practical brochure:

"This, then, concludes the detail of the majority of those instances, in which the oxyde of silver has been found so superior to all other means employed by the writer during an active professional life of more than thirty years; and he feels himself fully justified in inviting others to test a medicine, by the success of which, their usefulness may be increased, and the care which he has taken in arranging and presenting his cases, more than amply rewarded. That it is a tonic, and a sedative, as Dr. Golding Bird believed in 1840, and 1841, there can be no doubt; that it is a safe, and efficient astringent, there is good evidence to prove; the property of a specific is not assigned to it, for all know how very few of our remedial agents possess that character.

"Every experienced physician will admit that, owing to idiosyncracy and diversity of constitution, the same disorder presents a different aspect in almost every patient, and hence, that each case must be individually studied, and our remedial measures varied, in order to meet its peculiarities. John Abernethy, of glorious memory, (who taught his pupils to think for themselves, and not to submit, without inquiry, to any man's dictum,) was accustomed to say to them, quaintly and characteristically, 'Gentlemen, there is no such thing as a remedy for a disease, excepting sulphur, for a complaint which is never alluded to in good society, and (perhaps) mercury in another disorder, of at least, equally bad repute.'

"It will have been observed that the dose of the oxyde of silver employed by the writer in the foregoing cases never exceeded *three* grains a day, instead of six, as given on its first introduction, and that its employment is not recommended where febrile action exists in any considerable degree. In addition to its value in gastrodynia, in pyrosis, in hæmoptysis, in hæmatemesis, and in the first and second classes of menorrhagia, of Dr. Fleetwood Churchill, it will be found to be productive of infinite benefit in restraining, when absolutely necessary, hæmorrhage proceeding from the intestinal canal, obstinate chronic diarrhœa, colliquative per-

spirations, leucorrhœa, and other maladies, in the treatment of which, the writer is at the present time, extensively testing its efficacy." 75.

The thanks of the profession are due to Sir James Eyre for this plain and succinct detail of important cases treated by a safe and easy remedy which is only just coming into use.

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I. Traité Clinique et Pratique des Maladies des Enfans. Par MM. *Rilliet* et *Barthez*. Tom. 3. 8vo. pp. 2370. Paris, 1843.

A Clinical and Practical Treatise on the Diseases of Children. By MM. *Rilliet* and *Barthez*.

II. Manuel Pratique des Maladies des Nouveaux-Nés et des Enfans a la Mamelle. Par *E. Bouchut*. Small 8vo. pp. 610. Paris, 1845.

A Practical Manual of the Diseases of New-Born Infants and Children at the Breast. By *E. Bouchut*.

III. Practical Observations on the Diseases most Fatal to Children. By *P. Hood*. 8vo. pp. 231. Churchill, 1845.

We have long intended to present our readers with a succinct analysis of the contents of the important work placed first upon the above list, but have been prevented undertaking the somewhat laborious task by the pressure of other matters. The contributions of the French press to this branch of medical literature have been of late years numerous and valuable, but have chiefly related, as in the works of Billard and Valleix, to the diseases of new-born infants. It is the object of MM. Rilliet and Barthez to present a detailed account of the maladies affecting children aged fifteen months and upwards, and the complete manner in which they have carried it out must render their work a high authority for a long period to come. Paris offers in her large Foundling and Children's Hospitals opportunities for the pursuit of these investigations, which do not exist in this country. The absence of such establishments is not, however, a subject of unmingled regret; for there can be no doubt, as we observed in our notice of M. Billard's treatise, (Med. Chir. Rev. Vol. 32,) that much of the disease found within their walls, is generated by the assembling together of such large numbers of these little creatures; and the modifications produced in the nature and signs of the various affections by the operation of this circumstance, must prevent our too rigorously applying the conclusions derived from such a source to the exigencies of private practice. The authors have for several years laboriously cultivated this ample field of research with a view to the publication of the results. Besides the minute pathological statements and able diagnostic descriptions, so characteristic of the French school, we find a better acquaintance

with the writings of others, and a more accurate statement of therapeutical indications than are usually displayed by our continental brethren.

M. Bouchut's Manual relates to younger children, and is evidently the work of a judicious observer, qualifying as it does, in some instances, the hasty conclusions arrived at by preceding writers. It is the result of a two-years' study in the wards of Professor Trousseau.

Mr. Hood's work is about as unfit a one to put into the hands of a young practitioner as those above-mentioned are suitable for this purpose. The confidence of the tone assumed and the error of the doctrine taught, alike render it dangerous. Fortunately, adducing neither fact nor argument worthy of the name, its authority is not likely to become very great. A complete *hæmatophobia* has seized the author, and he sees in the child but a bloodless, sensitive, irritable little creature, whose maladies must ever be aggravated by depletion, however guardedly employed. He does not admit of the possibility of the use of the lancet, or the application of a single leech being admissible; and most of the few cases he alludes to are examples of his rescuing the victims from the consequence of more active procedures. The diseases of children ordinarily considered as inflammatory, and treated by depletion, such as bronchitis, pneumonia, croup, convulsions, hydrocephalus, &c., depend upon, according to Mr. Hood, the presence of a state of "irritation," in which blood-letting is worse than useless. The readers of this Journal need not be told how often we have protested against indiscriminate and excessive depletion at any age, much more that of childhood; and the attention of the medical observer has been forcibly called of late years, by several talented men, to the existence of conditions of the infantile economy which forbid debilitating measures of any kind. But the proscription of bleeding, local or general, under all circumstances, and the rash recommendation of opiates, tonics, and stimuli, in conditions of the system ill-fitted to endure them, were reserved for Mr. Hood; who does not find it requisite to embarrass himself with diagnostic minutiæ, and consequent variety in therapeutical indications; but having determined that children's diseases arise from and consist only in "irritation," simplifies his practice accordingly. This book should at least bring consolation to those practitioners who, observing the latter stages and post-mortem appearances of some of these affections, have felt poignant regret that more active measures were not instituted at an early period!

Our attention will be chiefly directed to the work of MM. Rilliet and Barthez, adding any illustrative particulars that may offer themselves in that of M. Bouchut. Both works contain some introductory observations, a few of which it may be as well to glance at.

1. *The Physiological Condition of Children.*—In children the *lymphatic* temperament especially prevails, which disenables them from offering strong resistance to injurious agencies, such as errors of diet, cold, impure air, &c.; but as they advance in age their susceptibility diminishes, their flesh becomes more firm, and the diffusion of heat is more uniform. The *pulse* being in children so rapid, their susceptibility to cold must depend upon some imperfection of hæmatosis. M. Trousseau found the numbers vary in children aged less than 21 months from 96 to 160, the mean number being 137 in the 1st and 2nd months, 128 from the 2nd to the 6th month,

120 from 6 months to a year, and 118 from 12 to 21 months. After the third month the pulse of girls commences to be more frequent than that of boys. Sleep has a remarkable effect, the number then diminishing 15 or 20 beats. Fear and other causes produce great acceleration, and the mere rapidity of pulse is therefore seldom an indication of treatment in the child, unless accompanied with fever. The *inspirations* vary from 20 to 32 in children from 2 to 5; from 20 to 28 in those from 6 to 10 years of age. They are regular, full, and noiseless, and during sleep in young children are often so deep as to amount to sighing. In these young subjects, too, the respiratory movements are often irregular or intermitting without any derangement of health. The normal form of the *thorax* and *abdomen* must be borne in mind. A depression which extends from the xyphoid cartilage around the lateral portions of the chest (the false ribs being at the same time expanded,) owing to these yielding more readily to the attachments of the diaphragm, and the small capacity of the pelvis, cause a remarkable projection forward of the abdomen, which in very young children may be mistaken for disease. After some years the pelvis becomes enlarged, the margins of the ribs more resisting, and the liver diminished in size—so that the superior and inferior abdominal organs making no projection, the marked boundary between the two cavities ceases to appear.

*Auscultation.*—The chest is more sonorous in the child than in the adult, and the vesicular murmur, which is also more intense, is only heard during inspiration. MM. R. and B. prefer mediate percussion by means of the finger and immediate auscultation, as the stethoscope frightens some children and pains others. In ricketty children, and others, in whom the chest is deformed, the examination is made more easily by having the child held to the ear horizontally in the arms of the nurse. The maximum of sound is perceived from just below the clavicle to near the nipple anteriorly, and in the intra-scapular region behind. M. Bouchut observes that, however true it is that the respiration is louder [*puerile*] in children more than two years of age, such is not the case in *children at the breast.* On the contrary, probably from the air not completely dilating the vesicles, there is very little sound indeed. So too in a healthy infant percussion is dull, being however sonorous if the child is very thin. The sound elicited even from the same child is liable to great change and variety, and is not to be relied upon.

2. *On the Examination of Sick Children.*—MM. Rilliet and Barthez give detailed explanations of the plans they followed in collecting the particulars of the various cases which came before them. They justly observe, without some mechanical aid of this kind, it is impossible for the medical officers of large institutions to record these with the requisite accuracy and minuteness. For each patient four sheets of paper are provided, one of which is dedicated to his history and state on admission, the second is a record of his progress and symptoms from day to day, and the third is a register of the results of the autopsy. The fourth forms a cover for the others, having written upon it a *resumé* of the particulars they detail. In the margin of each of these sheets every particular concerning which in-

quiry has to be made is *printed*, thus saving valuable time to the narrator, and preventing his overlooking any important point. One can judge upon a small scale how convenient this plan must be, by comparing the much less trouble it takes to reply to the medical queries of an insurance office, than it would do if the statement had to be made unaided by these. Examples of the tables are given, to which we refer those of our readers who are connected with large institutions.

3. *On the administration of Medicinal Substances to Children.*—The authors observe that, although in the course of their work they frequently recommend active medicines, yet that they agree with Henke, that if ever expectant medicine is justifiable, it is so in some of the diseases of children. Many of the functional disturbances do not require active drugs, and in others the diagnosis is but imperfect. Practitioners should remember too that, owing to the carelessness of attendants and the obstinacy of children, all they send is never administered. But we may ask, does not this often arise from the even yet continued practice of sending far more medicine than is required—a dangerous practice, for the parent quite unable to give all, is as unable to determine which and what portion is essential. The obstinacy on the part of children is chiefly manifested in their slighter affections.

MM. Rilliet and Barthez also deservedly condemn the *routine* practice which always treats the same disease in the same manner, without due consideration of the actual condition of the patient, the stage of his disease, or the hygienic circumstances which surround him. In almost all diseases, a period arrives in which the consideration of the general condition of the patient should predominate over that of the organ specifically affected.

*Modes of Administering Medicine.*—Giving children medicine by the *mouth* is not always practicable, and when other means suffice, they should not be irritated by the attempt. Where it is essential, the nose should be pinched with one hand, and the spoon introduced completely into the mouth with the other. Is sufficient pains usually taken to disguise the nauseous flavour of medicines? *Injections* are much used in France, for the conveyance of other substances besides laxatives. The dose required is often *less* than when given by the mouth. The substance is more readily absorbed if the bowel is first emptied and the mucous membrane cleansed by means of an emollient glyster thrown up just before. So too the action of an injected substance is often extended by following it with an abundant watery enema. The authors much approve of administering medicines by rubbing them into the *skin*, believing this very preferable to the endermic method. The skin should be well cleaned with warm water before the frictions are employed, which require repetition several times in the twenty-four hours. The inner part of the thigh is a very eligible site for absorption, or a piece of wool smeared with ointment may be retained in the armpit by means of a handkerchief. M. Prevost says, the facility with which any ointment is absorbed is much increased by adding 1 part of *ung. hydr.* to every 32 parts. *Baths*, simple or medicated, are highly useful, the authors usually employing them at from 26 to 28 Reaumur. A child may frequently be retained in a simple warm bath for one or two

hours, but in a medicated one not longer than from 15 to 45 minutes. *Foot-baths* are seldom used, and Hufeland says that steeping the feet with cloths dipped in hot milk forms a good substitute—inducing copious transpiration. *Hand-baths* are frequently used, and are very convenient, as the child need not be removed from its bed. *Cataplasms* and *fomentations*, so frequently used for children, require still more frequent renewal than they do in adults, to prevent chilling. *Blisters* are seldom used by MM. R and B. in consequence of the irritation they so often give rise to; and are especially to be avoided in very thin children, during the course of convalescence and chronic or enfeebling diseases, and during epidemics. Notwithstanding the observations of M. Bouchut relate to much younger children, he is a warm advocate of the utility of blisters applied for a brief period. Although the authors are more bold than their predecessors in this respect, they still have a very unfounded dread of *purgatives* in many of the diseases of children.

In their preliminary remarks MM. Rilliet and Barthez remark, that the *diseases of children* seldom pass through their various stages without becoming *complicated* with, or followed by, other morbid affections. On this account they might be classed in three categories: diseases which almost always appear during the existence of good health; those which are nearly constantly the consequence of a prior morbid state; and those which sometimes occur spontaneously and at others succeed another affection. In fact, the due consideration of the *primary* or *secondary* nature of the child's disease is of vital importance. The more diseases resemble each other the greater is their tendency to complication. Thus, if the primary affection be a phlegmasia, secondary or tertiary phlegmasiæ easily follow. The presence of dropsy or tubercle in one organ is usually accompanied by its existence in others. When the secondary disease is different in nature from the primary one, the latter has acted as a stimulus to its production. Thus tubercle may give rise to an inflammation of the organ in which it is deposited, and pertussis may develop a bronchitis or pneumonia. Although the severity of diseases is usually augmented by complication, they occasionally, when of a different nature, produce a contrary effect. Thus, scarlatina or small-pox occasionally cure tubercle; and some of the phlegmasiæ relieve some of the neuroses. If the affections are of a similar nature, the primary one will only be relieved when no diathesis prevails, in which case pneumonia, *e. g.* may cause the disappearance of diseases of the hairy scalp.

The distinction of diseases into *acute* and *chronic*, is not always so easily made or so fundamentally important as in the adult. The diseases of children often assume an intermediate form—frequently in consequence of a continued succession of morbid conditions. The disease may be acute as regards its duration and the nature of the lesions it gives rise to, but chronic in the sympathetic disturbance which it excites. When an acute disease attacks a feeble infant and vigorous re-action is impossible, it may be termed *cachectic*.

The various affections are treated of under eight separate divisions, viz. Inflammations, Dropsies, Hæmorrhages, Gangrenes, Neuroses, Continued Fevers, Tuberculizations, and Entozoaires. This is a very faulty classification, giving rise to the separation of diseases possessing strong affinities

of nature and locality, and leading to needless repetitions and omissions. Still, as our object is simply to place before our readers some of the principal facts, we do not think it necessary to depart from the order in which they here are detailed.

## CLASS I.—PHLEGMASIÆ.

Among the preliminary observations, there are some very good ones upon the various types under which inflammation presents itself in the child. Thus we may have the well-marked acute form in which the local symptoms and general re-action are well manifested, and a cure quickly results under antiphlogistic treatment, especially if the inflammation be not secondary. Other cases exist, acute in their progress and fatal in their lesions, but which are not accompanied by a degree of re-action proportioned to their gravity, and against which antiphlogistics employed alone are much less powerful. M. Bouchut remarks upon the absence or irregularity of the febrile action in young infants suffering from phlegmasiæ. An extract we shall give concerning what MM. R. and B. term the cachectic type of inflammation is worthy of notice :—

"In this case the child is feeble and sinks down in its bed; its eyes are hollow, its skin dry, earthy and yellow, its emaciation excessive; and its face covered with wrinkles like that of an old man. The almost lifeless muscles are seen to make scarcely any projection beneath the skin, the emaciation of the middle portions of the limbs giving their articular extremities an appearance of morbid tumefaction. Or the face may be pale, waxy, and œdematus, and the skin flabby, thin, and almost diaphanous. The limbs are infiltrated and the fleshy portions soft—the child in fact presenting the appearance of advanced cachexia. On touching the skin we find it cold, and can scarcely feel the small thread-like pulse. Food, even not of a tempting kind, is often taken with avidity, and a colliquative diarrhœa is commonly present.

"The preservation of the appetite and the general debility which is present, may prevent at first the belief that inflammation is present: but an attentive examination reveals the existence of an extensive, dangerous, acute inflammation, although it does not manifest itself by any of its proper external symptoms. Examination after death exhibits the traces of the inflammation which had been detected during life, as well as of other phlegmasiæ which had escaped attentive exploration, and oftentimes the chronic lesions which had given rise to the cachexia.

"Such is the appearance which some of the phlegmasiæ present, especially in early childhood. To treat such by antiphlogistics and debilitants would only be to hasten or to cause a fatal termination; while, by the use of tonics, or even of appropriate hygienic means, we may prolong the days of the child, or even effect a cure. We term this state *cachectic* rather than chronic; because the phlegmasiæ which are in the adult anatomically speaking chronic, are, in the child, sometimes chronic, sometimes acute.

"This different expression of diseases whose anatomical characters are identical, is so important, that its reality cannot be too much insisted upon. Two different causes (excess of tonicity and atony) produce the same effects; and if, guided only by the anatomical lesion, you attack the disease by the same remedies, you exasperate it in the one case and relieve it in the other. The treatment of phlegmasiæ in children should derive its indications rather from the symptoms than the pathological anatomy."

Inflammations are seldom *solitary* in children, and the serious consequences of a combination are thus stated:—

"A child attacked with bronchitis soon gets a pneumonia—to this pneumonia succeeds an enteritis or *vice versa*. In fact, inflammations succeed each other with the greatest facility, or rather they proceed simultaneously, aggravating rather than relieving each other. This remark, which admits of few exceptions, is of such therapeutical importance, that we may dwell upon it awhile.

"Suppose that an inflammation, developed at first in an organ of little importance, afterwards appears in one that is more so; the condition of the patient becomes absolutely worse, while sometimes the original inflammation disappears, at others it remains stationary or becomes increased. Thus, a child having impetigo of the scalp, is seized with pneumonia. The impetigo disappears or remains stationary, and the child is in a more serious condition. A child suffering from diphtheritis, or only bronchitis, is seized with pneumonia: the first disease remains stationary or augments, and the child's condition is worse. So that an inflammation of an organ may disappear, remain stationary, or increase under the influence of another inflammation developed in a more important organ. But it is to be well observed that the disappearance of the first inflammation is the exception, and that the general condition always becomes worse.

"The reverse question is an important one. An inflammation exists in an organ essential to life, what happens when another inflammation develops itself in an organ of less or about equal importance? We reply, that the first inflammation will never, or hardly ever, become diminished, and may be sometimes increased; and that the second inflammation will prove but an additional cause of death. Thus a child has pneumonia, and is seized with enteritis. The two diseases may proceed simultaneously, perhaps aggravating each other; but the enteritis will not cure the pneumonia. It is the same if an erysipelas or cutaneous eruption appears, *or if cutaneous revulsives are applied*. A sinapism or blister is often a painful excitation powerless for the cure of the internal malady, which pursues its course in spite of, or even aggravated by, this new phlegmasia.

"Phlegmasiæ may also become complicated with any other affection, whose gravity adds to theirs. Thus we see specific inflammations, and any of the diseases mentioned in our general table, may combine with the phlegmasiæ. Measles, small-pox, dropsy, hæmorrhage, tubercle, diseases of every kind in fact, may develop themselves either in the course of, or at the end of a phlegmasia—producing that entanglement and rapid succession of diseases, the source of the immense mortality of children."

### *Bronchitis.*

*Pathological Anatomy.*—In 174 autopsies, in which lesions characteristic of bronchitis were observed, *redness* of the mucous membrane existed in 143, and in 34 was found united with other lesions. The bronchitis was usually double (in 90), and when single (53) existed upon the right or left side in equal proportions. It was frequently confined to the inferior lobe, especially on the left side, but in the great majority of cases occupied the entire lung. In the 174 autopsies *dilatation of the bronchi* was found 74 times, such dilatation existing oftenest on the right side, and more frequently confined to one lobe than not. In 16 cases *cellular dilatation* (*en vacuoles*) was found; and in 17 out of the 174 cases *vesicular bronchitis* existed, being more frequently single than double, and occupying especially the left inferior or the right middle lobe. In 10 of the cases *false membranes* were found in the bronchi.

Each of these changes is described at considerable length. The authors believe that sufficient attention has not been paid to *dilatation of the bronchi* as a consequence of bronchitis in children. Sometimes the tubes are found dilated in their course, and at others only at their extremities. The dilatation of these latter into little ampulæ, which is never found where the bronchitis has not continued for 21 days, sometimes gives rise to the appearance of small abscesses resulting from pneumonia. These M. Bouchut states are rarely seen in children at the breast, but in their place small ecchymosed spots are found as soon as the bronchitis becomes general, and is about to pass into the state of pneumonia. In chronic dilatation the walls of the dilated tubes become thickened and the pulmonary parenchyma in part disappears, giving the section of the lung the appearance of that of a cheese having a great number of "eyes." *Vesicular* or *capillary* bronchitis is seldom found without accompanying inflammation of the parenchyma. Acute bronchitis is rarely found in a child less than five years old without accompanying pneumonia, the latter being the secondary disease, although the two may be developed simultaneously.

The authors state primary bronchitis to be a much rarer disease than it will be found to be in private practice. Thus of 115 cases of uncomplicated bronchitis, 21 only are set down as primary, the remaining 94 having become developed during the course of other diseases. M. Bouchut believes the primary form of the disease to be as frequent or more so than the secondary, but being less serious and fatal, comes less under the cognizance of the hospital physician. Age exerts considerable influence in predisposing to bronchitis—the younger the child, the less being the liability to it. Thus of the 115 cases, 37 were less, and 78 more than five years of age. Primary bronchitis occurs most frequently in girls, and secondary in boys, which is explained by the greater frequency of typhoid fever among the latter, a disease furnishing the greatest number of secondary bronchites. Measles, pertussis, and rickets, are other diseases during which its supervention is common.

The *treatment* in only moderately severe cases consists in the use of abundant ptisans, James' powder, emetics, and in older children a few leeches. When the cough is distressing it is much relieved by belladonna, and when it continues the only remaining symptom, by flowers of sulphur in small doses. In severe bronchitis a more active depletion may be required, but the authors caution against the rash and too often repeated employment of this, exhausting the powers of the child, and disenabling it from bearing up against the impending asphyxia frequently dependent upon large accumulations of secretions. After moderate but effectual depletion *emetics* must be much relied upon; and, if the child is not seen until a late period of the disease, they must frequently be substituted for depletion of any kind. They must be continued as long as the chest is oppressed by abundant secretions; but they are much less efficacious at a late period of the disease, seldom then exciting the stomach, abdominal muscles, &c. to vigorous action, being often either not returned at all, or as if by simple regurgitation. At this latter period successive sinapisms or blisters not applied long enough to cause vesication, are very useful remedies, by reason of their *revulsive* effect. Cruse has found in this ady-

nemic stage the use of musk or serpentary, and the employment of warm aromatic baths, highly useful. The child should not be allowed to be much on its back, but retained chiefly in the sitting posture or on its side, in order to facilitate the expulsion of accumulated secretions. In *chronic* bronchitis the diet must be good, and tonics with an occasional emetic prescribed; while the cough is best treated with some resinous balsam, as tolu, &c.

M. Bouchut, speaking of the treatment of this disease in children at the breast, recommends the employment of warm cataplasms or hot flannel compresses to the chest, emetics, and afterwards, if pneumonia seems supervening, the temporary application of a blister as large as the chest itself, or the use of the croton oil ointment. The loss of blood he considers as very rarely advisable.

### *Pneumonia.*

*Pathological Anatomy.*—The *Lobar Pneumonia*, as seen in the adult, is not the form usually met with in children. This is the *Lobular* in which certain lobules are inflamed, those surrounding them continuing unaffected. When the inflammation is perfectly circumscribed the authors term it *mammelonnated*, in which small spherical kernels of hepatized lung, varying in number and size, are scattered amidst the healthy texture. In these, the formation of abscess is by no means rare, still continuing in their isolated condition, or, in other cases, involving by their junction a part or the whole of a lobe. They are more commonly found in one lung than in both, and in children less than six years of age. *Partial lobular pneumonia* is distinguished from the foregoing by the line of demarcation separating it from healthy structure being less precise. Its volume is usually more considerable, and its form more irregular. While the centres of these inflamed portions are passing into the second stage, the circumference may be in the first, and joining with other inflamed portions until a state of *general lobular pneumonia* is induced. All these, as well as lobar pneumonia and vesicular bronchitis, are in fact but varieties in extent of the same phlegmasia, of which vesicular bronchitis may be represented as the first, and lobar pneumonia as the last, link of the chain. These various stages are not however necessarily passed through; for there can be no doubt that pneumonia may occur in children without prior affection of the bronchi. The entire of lesions reported amounted to 314, viz. 70 presenting the mammelonnated, 140 the partial, and 104 general pneumonia; but as in 111 of these cases there was a combination of the different forms, the autopsies were really but 203, of which number only five cases were noted in which the pneumonia was not double. The change described by M. Rufz under the name of *cornification*, in which certain lobules or even a whole lobe are converted into a dense fleshy-like body, much resembling the lungs of a fœtus which has never breathed, was met with 42 times, either in one (generally the right) or both lungs. The authors regard it as a species of chronic pneumonia, and indeed as the only form of this ever found in non-tubercular children.

*Of the Complication of Pneumonia with Bronchitis.*—MM. Barthez and Rilliet thus speak:—

"In the great majority of fatal cases of the pneumonia of children, bronchial inflammation is found. We have verified it in all its forms and degrees, from the state of simple injection with mucous secretion to acute dilatation of the bronchial tubes filled with purulent fluid or pseudo-membranes. We need not repeat the anatomical characters of bronchitis, and will only observe—(1.) That the form which coincides with pneumonia almost always is seated in the small tubes. (2.) In the great majority of cases, it co-exists with one of the forms of lobular, and rarely with lobar, pneumonia. (3.) Bronchitis with dilatation is found almost exclusively in infants who have died from the lobular, and hardly ever in those who have died from the lobar form. (4.) The bronchitis exists almost always at the circumference or centre of the hepatized portions, but may also be found elsewhere. (5.) Dilatation of the bronchi is very frequent in the carnified tissue."

*Respiratory Movements.*—Even at the commencement of the disease these are much accelerated, varying from 40 to 60, according as the child is younger. As the disease augments, they rise to 70 or 80 in the younger, and 50 or 70 in the older; and even when a cure is eventual, this rapidity never disappears before the sixth, and sometimes not until the twelfth day. Changes in its character and rhythm are observed only in about half the cases, and do not seem always dependent upon the severity of the disease: but MM. R. and B. have remarked that inequality in the movements, and especially an interrupted character, is almost always found connected with pneumonia of the apex in young children. In *secondary* pneumonia the acceleration of the respiration is often of very long duration and dependent upon the nature of the primary disease. In some cases of broncho-pneumonia the dyspnœa becomes as excessive as in suffocative catarrh. In *cachectic* pneumonia there is far less acceleration. M. Bouchut has some interesting remarks upon this subject:—

"The acceleration of the respiration always manifests itself as soon as the commencing pneumonia is established, reaching from 60 to 80. In other respects the respiration is natural, abdominal, without muscular effort or agitation of the alæ nasi. Its extreme rapidity gives it the same appearance as that of a dog which has just ceased running; and this state is exactly expressed by the term *panting* respiration.

"A disturbed state of the respiratory movements occurs only at a more advanced stage of the disease. Then we observe the anxiety of countenance, and the action of the inspiratory muscles. The nostrils are expanded* and the mouth gaping. When the dyspnœa is extreme, the lips are contracted, the commissures being drawn downwards and outwards. This is a very fatal sign. Respiration is less frequent than in the former case, and its rhythm is inverted. It commences by a sudden and strong moaning and jerking expiration, which is followed by a passive inspiration. Each expiration is accompanied by a lateral contraction of the base of the thorax, an enormous protrusion of the belly, and a depression of the subclavicular and sternal regions. I give to the *ensemble* of these phenomena the name of *expiratory respiration*, and if the reader will make a sudden expiratory effort, letting it be immediately followed by an inspiration, he will understand very well what I mean."

The *pulse* is ordinarily of proportionate frequency to the respiration, but

* MM. Rilliet and Barthez observe the dilatation of the alæ as most remarkable during the first days of the disease.

in some cases after three or four days this relation ceases to exist. At no age has it been observed less than 120 from the first to the sixth or seventh day, while in the very young it sometimes reaches from 140 to 180. M. Trousseau has counted it 220. Generally it diminishes after the sixth or seventh day, sometimes rapidly so; but in cases about to terminate fatally, the rapidity is resumed. In *cachectic* pneumonia it is usually small and slow.

After describing the state of the *nervous system* in ordinary cases, which is just that which attends the other acute affections of children, MM. B. and R. make a remark respecting some rarer cases which may be useful:—

"In these the disease *commences* with violent convulsions, which are often repeated and followed by loss of sensibility. These symptoms then disappear, leaving only a considerable acceleration of respiration and pulse, which should always make us suspect a lesion of the lung: for when the above symptoms result from a phlegmasia of the nervous centres, *the respiration is in general lessened in frequency*. It is exclusively in pneumonia of the apex we have observed the phenomena. Cerebral symptoms are observed in *secondary*, but not in *cachectic* pneumonia."

*Forms of the Diseases.*—Of these there are three. (1.) *Primary* or *Idiopathic Pneumonia*. Gerhard and Rufz formerly stated this was never found in children under five years of age. This Rilliet and Barthez denied in 1838, and subsequent observation has confirmed their statement. (2.) *Secondary Pneumonia*, occurring during the course of, or in the convalescence of other diseases, as rubeola and variola. (3.) *Cachectic Pneumonia* occurring during the course of chronic disease, or in very debilitated subjects. This is peculiar to young children, and is found especially in the course of chronic enteritis, or at a distant period after the disappearance of the exanthemata. By reason of the absence of active symptoms, such as cough, pain, fever, &c. this disease would seldom be detected but for auscultation, which is of the less consequence, as it is the general state of the system that especially requires attention. Of 245 cases, the authors found pneumonia to be *primary* only in 58, of which number only 24 were less than five years of age. Of the *secondary acute* form there were 102 below and 36 above that age; and of the *cachectic* form, 45 below and 4 above it.

There are several circumstances worthy of note dependent upon the prior state of health, age, and sex of the child:—

"The *state of prior health* exerts a marked effect upon the anatomical form and seat of the disease. Thus, at whatever age it occurs, *primary* pneumonia is usually *lobar*. It was so in 55 times out of the 58 cases. The reverse does not however exactly hold good, for of the 187 *secondary* pneumoniæ, 29 were also *lobar*, the 158 being lobular. But still the influence of the former disease exists, and lobar inflammation almost exclusively manifests itself in the course of an acute disease, and very rarely in cachectic subjects. Of 28 secondary lobar pneumonia this form only occurred 4 times in debilitated subjects.

"*Age* exerts a great influence. Thus, of 245 patients, 172 had not reached their fifth year. It has been too generally stated that *lobular* inflammation is peculiar to children from two to six years, although it is doubtless far more frequent then than at a more advanced period. Of 203 autopsies, lobular inflammation was discovered 160 times in children from one to six years of age, and but 43 times in those aged from six to fifteen.

"The influence of *sex* is also multiple. Pneumonia at any age is more frequent in boys than girls. Even allowing for the fact of our having observed a greater number of male than female patients, the preponderance is marked. Of 245 pneumoniæ, 150 occurred in boys and 90 in girls. This predominance of the masculine sex is also more remarkable in lobar than in lobular pneumonia, and in proportion as the child's health was robust prior to the attack."

M. Bouchut, referring to the statement of Valleix, that nearly all the children who die at the Foundling Hospital have hepatized lungs, states that, at his own hospital, of 101 deaths occurring in 1842, but 28 arose from pneumonia. He admits the disease may manifest itself idiopathically, although in the great majority of cases it is secondary. He has observed it especially in Winter, and as often in girls as in boys.

*Prognosis.*—This disease, which is represented by Valleix as nearly uniformly fatal in new-born infants (viz. 127 out of 128 cases,) is less so in older children. M. Bouchut found in 55 cases, aged from some days to two years, 33 deaths; and M. Barrier found in 61 cases, aged from 2 to 15 years, 48 deaths. MM. Rilliet and Barthez observe that *primary*, uncomplicated pneumonia is almost always cured in children; but the disease is very grave if it becomes complicated with cerebral or intestinal affections, &c. A second pneumonia may prove fatal in consequence of the deterioration of health brought about during the cure of the first. *Secondary* pneumonia is a much more fatal disease, whose consideration they defer until they treat of the diseases, as measles, &c., during the course of which it generally presents itself. *Cachectic* pneumonia is of all the most fatal.

The symptoms menacing an unfavourable termination, are convulsions occurring at the commencement, notable smallness of the pulse whether in the early or later stage, excessive rapidity of respiration, persistence of bronchial respiration in the very young, slowness of resolution of the inflammation, abundant diarrhœa, and long continuance of cerebral systems. Great emaciation, marked change of countenance, excessive irritability, and a yellowish tinge of the skin are other signs of bad import. Upon this part of the skin M. Bouchut observes:—

"There are some symptoms whose importance in the prognosis has attracted the attention of M. Trousseau, who is very skilful in estimating these manifestations. *The swelling of the veins of the hand* coincides with the difficulty of respiration, and is, according to this physician, a very bad sign in pneumonia, proving that the obstacle to hæmatosis, from the extent of the changes in the lungs, is very considerable. It is the same with the *tears*, which manifestation of suffering of the healthy child ceases, when it becomes affected with serious illness. It cries, but there is no secretion unless an evident amelioration in its state has taken place."

*Effect of Dorsal Decubitus.*—MM. Rilliet and Barthez, alluding to the various anti-hygienic predisposing causes, as crowded wards, foul air, bad living, &c., thus speak of the effect of decubitus:—

"We possess observations of cases in which the only cause which could explain the secondary pneumonia was the state of inaction in which young children are left in the crowded wards of hospitals. At this age, weakness and the difficulty of expectoration favour the stasis of fluids in the most decumbent parts,

and their prolonged sojourn determines inflammation of the bronchi and lungs. We say determines, because the anatomical characters of infantile pneumonia have not in most cases appeared to us analagous to hypostatic pneumonia, and we cannot agree to explain only in this mechanical manner lobar and lobular hepatization. We are at issue with M. Gerhard, who believes that the pneumonia of children, from two to five years of age, presents an exact analogy to sanguinary congestions resulting from mechanical obstacles to the pulmonary circulation. It seems to us to deny that pneumonia of young children possesses the true characters of inflammation is to oppose all evidence. The rapid progress, formidable reaction, and obvious changes of structure, sufficiently characterize the disease."

*Treatment.*—MM. R. and B. believe that the cases in which *blood-letting* is advisable have not been sufficiently discriminated, the local lesion having been too exclusively kept in view. Leeches or general bleeding in the *primary* disease are essential, but in the *secondary* form their use is the exception—being then confined to cases in which the child is not very young, the primary disease has not long existed, and the debility is not too considerable. *Tartar-emetic*, in contra-stimulant doses, exerts a marked effect in diminishing the rapidity of pulse and respiration, but when it is given early and alone this is not permanent. The best treatment is the combination of bleeding with it, in all cases except those in which great debility prevails, but especially in the idiopathic form. In cases not admitting of such decisive treatment the *white oxide of antimony* in very large doses is an useful remedy. Small doses of *Kermes* are sometimes beneficial. The Germans prefer giving antimony after bleeding in *emetic* doses, and the authors approve of this when there is considerable accompanying bronchitis. In persisting hepatization too, the Germans are very partial to calomel and digitalis, but our authors prefer the contra-stimuli. *Tonics* are required after the resolution of the inflammation, and much harm results, especially in the secondary form of the disease, from a too long persistence in antiphlogistics. The authors do not approve of *blisters* and other exutories, believing they often produce an injurious reaction, and in the emaciated and feeble state of the body in secondary pneumonia may do much harm. They use them when bronchitis is also considerable.

We agree with M. Bouchut in preferring ipecac. to the tartar emetic, on account of the occasional prostrating effects of the latter. M. Valleix, however, employs it conjointly with bleeding. M. Bouchut does not hesitate bleeding young infants when they manifest sufficient power of reaction; and, in those cases in which reaction is nearly or quite absent, he recommends quinine. He has not the same fears of blistering as the authors above quoted have; and states that he has frequently seen an emetic and a very large blister, occupying the whole of the posterior part of the thorax, cut short the disease in its earliest stage.

### *Emphysema of the Lungs.*

This affection is noticed here because, in the great majority of instances, it is a consequence of bronchitis or pneumonia, although it may be also produced by other causes inducing great acceleration of respiration, with obstruction to the penetration of the air. The emphysema is usually

seated at some distance from the inflamed portion, thus, *e. g.*, the latter is found chiefly in the inferior, and the emphysema in the superior lobes. *Chronic* emphysema, so frequent in the adult, is *not found in the child*, except indeed when it results from the compression of the lung in rickets. *Vesicular* emphysema is infinitely more frequent than *interlobular*; for Rilliet and Barthez found in 134 cases 126 were vesicular, and 19 interlobular. In 11 the two lesions co-existed; and in 115 the vesicular, and 8 the interlobular form existed alone. Bouchut, on the contrary, speaking of younger children, says, "we very frequently meet with interlobular emphysema, hardly ever with vesicular." The lungs are more or less distended, accordingly as some lobules, a lobe, or an entire lung, are affected. The vesicles, of the size of pin's heads, and never so large as hemp-seed, are seen by the naked eye, and upon dividing them their walls are not found thickened. The affection is usually only partial, occupying especially the anterior border and apex of the lung. The physical signs are different from those offered by the adult, for while in the latter the respiratory murmur is feeble and the parietes are sonorous and dilated, in the child, the murmur is exaggerated, and the chest not more sonorous than in health.

### *Pleurisy.*

Idiopathic pleurisy was formerly believed never to occur in children, but the investigations of the authors and others, prove this opinion to be erroneous. In very young infants it is a rare disease, for they have only met with three cases below five years of age, and M. Bouchut relates but two others. The secondary disease is not rare in these, for the last-mentioned author found in 68 autopsies, marks of pleurisy in 23. It is usually, however, a complication that adds little to the gravity of the original disease. Pleurisy is much oftener unilateral than double, the right side being that most frequently affected, except when it is complicated with secondary pneumonia, when the left predominates. False membranes are the most usual inflammatory product, but they are usually soft, thin, and loose, and do not form firm adhesions, as in adults. They are found at the lower part of the cavity. The quantity of serum effused is seldom considerable.

Rilliet and Barthez mention *bronchial respiration* as a very early symptom of the disease; being audible on the second or third day. Its sound is peculiar and metallic, and differing from that in pneumonia. It is usually heard on one side only, and especially in the vicinity of the inferior angle of the scapula and intra-scapular spaces. It sometimes disappears at the end of two or three days, and may then re-appear or not. They explain the frequent occurrence of the sound by (1) the small capacity of the chest in the child, (2) the greater number of inspirations, (3) the small quantity of fluid effused. Mostly it is accompanied by *ægophony*. Absence or feebleness of respiratory murmur may co-exist, but is usually found in chronic cases or debilitated subjects. When the pleurisy supervenes on pneumonia, occasionally a complete absence of respiratory murmur replaces the bronchial respiration; but in most cases the latter becomes augmented in intensity, and even cavernous, so as to lead to the belief of the existence of a cavity—the voice at the same time resounding with such force as lite-

rally to pierce the ear. M. Bouchut notices as a very marked sign the *absence of vibration*, upon the application of the hand to the chest during the respiratory movements or cries of the child. In *pneumonia*, on the contrary, this vibratory movement is much *augmented*. The *dyspnœa* is not so urgent in the primary form as it is in pneumonia (the alæ nasi not being dilated at so early a period,) and the respiration frequently becomes almost normal again about the 4th or 6th day. In pleurisy which is secondary to a pneumonia, the oppression of breathing is sudden and extreme.

*Prognosis*.—Simple primary pleurisy is usually cured, and secondary pleurisy is a less fatal disease than secondary pneumonia. Pleuro-pneumonia is a very dangerous disease, and *cachectic* pleurisy is almost constantly fatal. Of the 60 cases adduced, 21 were simple and primary, and all recovered; 12 secondary, of whom 3 died; 5 primary pleuro-pneumoniæ, of whom 2 died; 10 secondary pleuro-pneumonia, of whom 8 died; 5 chronic pleurisy, of whom 2 died; and 7 cachectic pleurisies, all of whom died. Secondary pleuro-pneumonia is the only form of the disease found most frequently in children less than 5 years of age: while 5 only were found in 21 pleurisies, 44 were found in 61 pleuro-pneumonies:—

"*Influence of Prior Diseases*.—Just as bronchitis is one of the most frequent causes of the development of pneumonia, so pneumonia exerts an evident effect in the production of pleurisy. But frequently the inflammation of the pleura consists only in a few false membranes, or the effusion of a little fluid, constituting no serious disease. However, in other cases, the pleurisy becomes as grave a disease as the pneumonia itself. A number of diseases which are considered as predisposing causes of pleurisy, have in themselves no direct influence in this way: but as they are frequently complications of pneumonia, we see in this inflammation the true cause of pleural phlegmasia. Thus, nothing is so rare as to see measles complicated with simple pleurisy; while rheumatism, scarlatina, and Bright's disease, are the affections in the course of which simple pleurisy ordinarily occurs. We must not, however, confound with pleurisy the acute hydrothorax which so frequently complicates the diseases we have mentioned."

*Treatment*.—Leeches for young children, and general *bleeding* for older ones, if had recourse to at an early period, will rarely require repetition in acute pleurisy. In the secondary and chronic forms a small loss of blood may also be required. The side affected should be enveloped in a *cataplasm*, and abundant diaphoretic or diuretic drinks given. Where the disease does not yield to a bleeding, and is of an active type, the administration of *tartar-emetic*, as in pneumonia, is useful. This medicine is of no avail in simple secondary pleurisy, attended with great orthopnœa. In these cases, *calomel*, united with *digitalis*, as employed by the Germans, is of great use; but it is especially in chronic pleurisy that mercurials are indicated. *Diuretics*, as nitrate potass, digitalis, &c., may be given as adjuvants in small doses, in the diluent drinks taken by the child; but in secondary pleurisy, attended with suffocative symptoms, which follows generally eruptive fevers, and proceeds with great rapidity, and mercurials have not proved useful, digitalis or squill should be given in full doses. *Purgatives* are chiefly of use in chronic pleurisy. *Blisters* and other derivatives are not approved of by the authors; but they think advantage is

derived in chronic pleurisy from enveloping the side in a large diachylon plaister. *Tonics* are required in the chronic or cachectic forms. The operation of *paracentesis* is spoken of by the authors in a favourable manner, affording as it does more chances of recovery in the child, in whom chronic pleurisy, independent of phthisis, is more frequent than in the adult. They do not, however, cite any facts of their own, but refer to those reported by M. Heyfelder. M. Trousseau has published a paper in the 12th volume of the Annales de la Chirurgie, highly approving of this operation.

### *Pericarditis.*

This is a rare and almost always a secondary affection in children, occurring almost exclusively in children less than six years of age, and generally in the course of rheumatism. The remarks of the authors are founded upon twenty-four observations. The quantity of fluid secreted is usually small, and the density of the false membranes much less than in the adult. When the disease is slight it does not furnish distinct symptoms. It does not seem in itself a very dangerous disease (except where the whole pericardium is affected,) death having usually occurred, in the fatal cases, in consequence of the primary affection. The treatment is very similar to that required for pleurisy, digitalis as a means of calming the action of the heart, and mercurials as inducing absorption, being especially indicated. Dr. Alison, in the 35th volume of the Medical Gazette, relates some interesting cases of pericarditis supervening on scarlatina.

### *Coryza.*

This, which in its simple form is usually a very slight disease, becomes a very severe one in the chronic and pseudo-membranous forms. M. Bouchut describes a chronic syphilitic form as not of rare occurrence, and as best relieved by the iodide of potassium. Pseudo-membranous coryza is a rare disease, and is seldom observed unconnected with the same form of angina. The dense false membranes which are formed, powerfully impede respiration, and the obstruction gives a peculiar resonance to the cough. The disease is usually fatal. If pseudo-membranous affections are not raging epidemically, a few leeches may be applied to the mastoid process. Where depletion is contra-indicated, revulsives to the lower extremities and calomel should be employed. After the use of emollient injections, astringents, as powder of alum and gum āā, or calomel and gum, may be blown into the nostril, or a solution of argent. nitr. may be applied by means of a pencil or glass syringe.

### *Stomatitis.*

This may manifest itself in the *pseudo-membranous* and *ulcerative* forms, and the latter must not be mistaken for gangrene of the mouth, which will be treated of hereafter. The ulcers usually commence on the gums, and the insides of the cheeks are afterwards affected; they are sometimes very deep, but on feeling with the finger we do not perceive the hard cir-

cumscribed engorgement surrounding them, as in gangrene, but a soft flabby sensation. Nor does the external skin present the hot, shining, smooth appearance, as in gangrene. The fætor of the breath is very similar, and in bad cases abundant salivation occurs. The prognosis is much more favourable than in gangrene, a cure usually soon following proper treatment. It occurs especially between the ages of 5 and 10, affecting children of feeble habit or exposed to adverse hygienic circumstances, and those who have long suffered from other diseases. It is endemic in some wards of children's hospitals, and M. Taupin considers it contagious.

Improving the hygienic condition of the child and the use of an acidulated gargle, often suffice for a cure. When the inflammation is very severe leeches are required, and rubbing dry *chloride of lime* into the part with the point of the finger twice a day is the best application, washing the mouth with water a few seconds after using it. When the cicatrization commences, a gargle, formed of 1 part of the chloride, 30 of mucilage, and 15 of syrup, may be used. If the chloride be left off too soon, relapse is sure to occur. M. Bouchut prefers this application, honey 15 to 20 parts, hydrochloric acid 3 to 5 parts. M. Trousseau cauterizes the parts with nitrate of silver or hydrochloric acid, and uses in the intervals a paste of equal parts of honey and borax. A good diet and free exposure to pure air are essential.

M. Bouchut has an interesting chapter upon the *Muguet*, which is not a simple stomatitis. According to M. Gruby, the white deposit in these cases is formed by a cryptogamous vegetable parasite, and is seated externally to the mucous membrane, although the epithelium is separated in removing it. It occurs occasionally as an idiophatic disease in children of bad health, but usually in the course of other diseases, especially entero-colitis, pneumonia, and phthisis. It is not a fatal disease, and the author cannot understand the statements of MM. Valleix and Baron, who represent it as highly so. It must arise from their representing death as occasioned by *muguet*, which really resulted from the primary diseases. Valleix states that 22 out of 24, and Baron that 109 out of 140 died. Of 42 patients, Bouchut found 14 affected with the idiopathic disease, who all recovered, 20 died affected with entero-colitis or pneumonia, and 8 still remained affected with the original diseases and the muguet. The disease is oftener found in infants at the breast, than at any other age. It may be propagated by contact. Various emollient and astringent applications have been recommended; but honey and borax in equal parts is by far the best one.

### *Diphtheritis.*

This, the *pseudo-membranous* form of *pharyngitis* or *angina*, may occur as a primary disease, as well as consecutively to the exanthemata. The deposition of the firm false membranes is characteristic, the mucous membrane beneath being sometimes smooth, at others ecchymosed or ulcerated, especially in the secondary form. The febrile re-action is not ordinarily intense, and the sporadic uncomplicated form is of short duration, while the degree of febrile action in the secondary form depends upon the primary

disease. Bretonneau first proved this not to be a gangrenous form of angina as formerly it was believed to be, the error having arisen from putrefying false membranes being mistaken for eschars. Gangrene in its progress and symptoms is quite a different disease, but in some epidemics it may have prevailed coincidentally with the pseudo-membranous angina. Gangrene chiefly attacks debilitated children, while this affection equally attacks the most robust. The *prognosis* is usually very favorable in the sporadic form, and is not unfavourable in the epidemic form, when there is not a great tendency in the disease to spread to the air-passages or to the skin, producing croup in the one case, and abundant suppuration in the other. In the secondary form the prognosis is much less favourable.—The disease is very frequently epidemic in France and Switzerland, and the authors believe it to be contagious. The *treatment* must at first be antiphlogistic proportionate to the character of the epidemic; but *local* applications are most to be relied upon. These are hydrochloric acid, nitrate of silver, alum, or chloride of lime, in different cases. The caustic should be applied in its strong state once in the twenty-four hours, and afterwards oftener, but diluted, taking care always to go beyond the margin of the part affected. Emetics are useful adjuncts, and *mercury* should be employed if the air-passages are implicated, while in the feeble, tonics are required.

### *Croup.*

We need not transcribe the author's description of the well-known anatomical characters of the disease; but it may be useful to remember that, of 120 cases collected by M. Hussenot, the false membranes extended to the bronchi in but 42, and not beyond the trachea in 78. Even when the bronchi do not contain membranes they are usually inflamed, reddened, softened, and more or less filled with mucus or pus. In ⅔ of the cases observed there was lobular pneumonia, and emphysema existed in the majority.

After detailing the *symptoms* of croup, MM. R. and B. thus remark upon their want of correspondence with the lesions:—

"Let us enquire whether the extent of the lesions is proportionate to the intensity of the symptoms? In a great number of cases it evidently is, while in many others it is far from being so; and if large cylindrical pseudo-membranes obstructing in a great measure the larynx, trachea, and bronchi, are accompanied by formidable symptoms, symptoms no less severe exist in the case where the lesion is far more limited, or where it is but rudimentary. Numerous examples are found in authors where the most frightful symptoms of croup have existed, and yet the autopsy has only shewn a few shreds of pseudo-membranes in the larynx, and sometimes even only in the trachea. Moreover, is there not a disease which offers so great a similitude to croup as to have been confounded with it by most authors, and in which no sort of change is found after death in the laryngeal mucous membrane, or only a slight inflammation without tumefaction capable of obstructing the air-passages? Then, do not cases of secondary croup prove that false membranes, or inflammation of the mucous membrane, will neither account for all the phenomena. * * * * * * * * * * * "The symptoms of croup seem to us then to depend simultaneously or solely upon the presence of false membranes, of inflammation of the mucous membrane, and of spasmodic contraction of the

larynx. This last may alone produce suffocative paroxysms and acute laryngeal wheezing (heard during inspiration), and that when no false membrane covers the *cordæ vocales*. We cannot attribute much influence to inflammation of the mucous membrane, since it is accompanied by so little swelling in croup. We do not believe in a sudden swelling of the glottis, because the wheezing and suffocation come on without obvious cause, or under the influence of some moral cause, as passion, &c.—the same causes in fact that determine the paroxysms of pertussis. The presence of the false membrane explains a part of the symptoms of croup. But the existence of these symptoms in the absence of the pseudo-membranous concretions renders another explanation necessary. The temporary swelling of the glottis, which is nowise proved, cannot account for the phenomena, *while spasm of the larynx* explains them perfectly, and its existence is justified by the analogy of other nervous diseases."

*Tracheotomy in Croup.*—A valuable paper from the pen of Professor Trousseau is introduced into both of these works. The opinion of observers in this country is not much in favour of the operation, and it is well to see what so able an advocate has to say in its favour. M. Trousseau observes that, as the operation in itself is not dangerous, the ill success which has often attended its performance in laryngitis and croup has much arisen from its being delayed until the phenomena and consequences of asphyxia have shewn themselves. Tracheotomy is to be preferred to laryngo-tracheotomy. The dangers of the operation have been much exaggerated, for in 121 operations, M. Trousseau has had but one fatal accident during their performance. An adult died the instant an incision was made into the skin.—

"It has doubtless happened that I have met with arterial anomalies: but as I always make it a duty to operate very slowly, and never to make a stroke with the knife without being certainly directed by the finger and the eye, I am persuaded I should avoid the left carotid, if it should be given off from the innominata and cross the upper part of the trachea. As to the trunk of the innominata, I have had it several times under the edge of the bistoury, but in bending my incision a little to the left, and separating the tissues with the finger and with the *erigne*, I have completed without fear or accident operations apparently so dangerous. Those surgeons who pride themselves upon performing the operation with a marvellous rapidity, and plunge the bistoury boldly into the trachea to divide it from below upwards as soon as they have finished the incision of the skin, will deplore this imprudent and useless celerity, when they find under the edge of the knife vessels which it is so easy to avoid when it is more the object to operate safely than quickly."

One important reason for preferring the trachea as the site of the operation is, that the necrosis of the cartilages, which is often excited by the presence of the canula, is of less consequence there than it would be in the larynx. The thyroidean and other large veins should be avoided as much as possible during the operation, and should never be tied if divided. When blood has been accidentally introduced into the trachea, M. Trousseau has never found ill effects result, if the lips of the wound have been held open, or the canula at once introduced. The canula becomes a valuable means of introducing topical applications to the disordered mucous membrane. Thus a strong solution of nitrate of silver (1 part to 5 of water) may be applied by means of a little mop, at first three or four times and afterwards once daily, a weaker solution being occasionally injected as well.

Water injected in small quantities frequently relieves irritation and obstruction, and assists the expulsion of false membranes, &c. M. Trousseau thus concludes his paper :—

"With these means of treatment, which are carefully employed by M. Bretonneau and myself, the success has not been very brilliant. Yet in twenty operations M. Bretonneau has saved six children, and in 112 I have saved 27. M. Leclerc, who adopts this operation, has saved the two children he has operated upon. M. Velpeau has cured two out of ten, and M. Petel, three out of six. Thus of 150 operations success has attended in 39. I regret I cannot give the results obtained by many other of our *confrères*, who have adopted the therapeutical means recommended by M. Bretonneau and myself. The comparison of results would have been interesting, but the materials are wanting. What, however, we know very well is, that in the practice of MM. Gerdy, Robert, Guersant, &c., &c., there are living in Paris nearly fifteen children who have had tracheotomy performed in the last stage of croup, and in whom our subsequent plan of treatment has not been followed.

"I believe I may add some propositions in relation to the prognosis which may prove of some interest.

"1. If the disease began several days ago, and the croup consequently makes slow progress, the children, whatever be the extent of the false membranes, will either be cured, or will live at least for several days. 2. But if its progress has been very rapid, although it should prove at the time of the operation that the false membranes did not extend beyond the larynx, the children die very quickly. 3. If, prior to the operation, the false membranes invade the nostrils, if they cover the surface of blisters, if the child is pale, and is a little bloated without having been bled or taken mercury, or if it has been much bled, the operation offers but little chance. 4. If, before the operation, the pulse is moderately frequent, and continues quiet after it, there is hope. 5. Rapid respiration immediately after the operation, with little or no cough, is a bad sign. 6. More boys than girls are cured. 7. Children less than two, and more than six years of age, are seldom cured. 8. All things being equal, the danger is great in proportion to the extent of the false membranes. 9. If the child is subject to chronic catarrhs, and if it had taken cold some time before the croup seizing it, the chance of success is the greater. 10. When all seems going on well, rapid respiration is a bad sign. 11. The more rapid and severe the inflammatory action which seizes the wound, the more probable the cure. The sudden sinking in of the wound is a mortal sign. 12. There is nothing to fear as long as the respiration is normal, or noise is only produced by the displacement of mucosities; but if it becomes *serratic* (i. e. noise like that made in sawing stone,) death is certain. 13. We must not despair even if a pneumonia or pleurisy supervenes. 14. Restlessness and sleeplessness are bad signs. 15. If the wound becomes covered with false membranes; if, on the removal of the canula, it does not contract promptly; if, when nearly cicatrized, it becomes widely re-opened, there is danger. 16. The sooner we are enabled, in consequence of the freedom of respiration through the larynx, to remove the canula, the more certain and rapid is the cure. 17. The operation does not succeed in croup supervening upon measles, scarlatina, small-pox, or pertussis. 18. If, on the third day after the operation, the expectoration becomes mucous and catarrhal, the children are cured; if it is absent, serous, or resembles little pieces of half-dried gum, they die. 19. If there is considerable re-action upon the injection of water or nitrate of silver, we must not despair, however bad the other symptoms may be. 20. Children seized with convulsions die; and convulsions are more likely to occur as the child is young, and has lost much blood before or during the operation. 21. When, after the 10th day, drinks pass almost entirely from the pharynx

into the larynx and trachea, although they may be easily rejected, the children generally die."

*False Croup, or Spasmodic Laryngitis.*—This affection is not considered by MM. R. and B. as purely spasmodic, but as compounded of a spasmodic and inflammatory element. They observe it has been recognized in France long after its admission as a separate disease in England; and they attribute the success of many vaunted remedies for croup, and accounts of relapse, to this form being mistaken for the true one. The diagnosis is often very difficult, and in some cases impossible, in the early stages. The following signs are enumerated by Wichmann :—

"False Croup—1. Comes on suddenly, the first attack almost always manifesting itself at night. 2. It is always sporadic. 3. When the cough exists it is dry, without any expectoration. 4. Pain is absent, but there is a sense of constriction of the thorax. 5. The voice is raucous or hollow. 6. There is no fever. 7. The symptoms are alternated with intervals during which the children seem quite well. *True Croup*—1. Commences slowly and by degrees, the first attack generally coming on in the day. 2. It is generally epidemic, rarely sporadic. 3. Layers of puriform matter or membranous concretions are expelled by coughing or vomiting. 4. Pain exists in the air-passages, and slight tumefaction may be felt though not seen. 5. The voice possesses a sound quite peculiar. 6. There is fever. 7. There are not evident intermissions."

M. Bouchut observes :—

"The progress of this affection is essentially different from that of true croup. We find a sudden increase of frightful symptoms of suffocation, which cease to reappear with less and less intensity, until they disappear entirely. The intermissions are well-marked, during which the general health remains good. Croup is characterized by its increasing gravity. The attacks, slight at first, become more and more violent until they threaten or cause death from asphyxia. In the intervals the children are suffering under a horrible difficulty of breathing, the colour of the face indicating the magnitude of the obstacle to free respiration. So, too, on examining the back of the mouth, we may often detect the existence of characteristic false membranes."

Still the practitioner is often left in doubt, and feels himself compelled, on account of the fearful rapidity of progress of the true disease, to treat the case more energetically than he would do if he could assure himself it was an example of false croup. Even the spasmodic form may prove fatal if the suffocative paroxysms are frequent and intense. Pretty free, though not excessive depletion, revulsives to the lower extremities, emetics, and purgatives, anti-spasmodics, as musk and assafœtida, and narcotics, as belladonna, are the means recommended by the authors. They notice also Dr. Lehman's plan of applying very hot sponges (hot salt will do as well) incessantly until diaphoresis is excited. This simple means should always be had recourse to instantly in any paroxysm of a croupy character, and it will often render farther measures unnecessary.

### *Gastro-Enteritis.*

MM. Rilliet and Barthez give, prior to describing the individual affections, a good general view of the physiological condition, cadaveric changes, and pathological anatomy of the gastro-intestinal mucous membrane.

This our space forbids quoting. Among other facts they observe that mere redness or ramollissement, taken alone, may result from cadaveric changes, but when seen together, they usually are the consequences of inflammation. In cadaveric injection the vessels are larger and intercommunicate much more freely, while the colour is a dull violet rather than a brilliant red. In non-inflammatory ramollissement the mucous membrane is generally quite pultaceous, or, when it is less so, of a milky whiteness. In inflammation, too, the consistence may be pappy, but, in most cases, small portions of the softened membrane may be raised entire. If *thickening* is added to the above appearances, inflammation has certainly existed. Its degree is not always appreciable, slight projections of different points of the mucous membrane giving it the appearance of enlarged villi. The polish of the membrane is replaced by a peculiar shagreen appearance. When chronic, the submucous tissue becomes hypertrophied and indurated; but a contracted condition of portions of the canal may simulate this appearance. *Ulceration*, even independently of typhoid and tuberculous disease, is not uncommon in children. The follicular ulcers, commencing in small serpiginous lines, eventually occupy a vast extent of membrane. They differ from tuberculous ulcers in not penetrating the submucous tissue, and they are sometimes covered by a false membrane. In a few cases, in all of which tartar-emetic had been given, a kind of *pustular* inflammation was found to be developed:—

1. "*Gastritis and Ramollissement of the Stomach.*—The time is not very distant when gastritis was the pivot upon which all pathology turned. The observation of facts not having justified the conceptions of genius, inflammation of the stomach has become regarded in our day as one of the most rare of diseases. In this there is some exaggeration. Perhaps the re-action has gone too far in attributing to the stomach a kind of immunity against inflammation, especially that which results from irritants directly applied to it. However this opinion may be disputed as regards the adult, it cannot be in respect to the infant. But, while stating that gastritis is more frequent and more easily produced in the young than is generally admitted, we have no difficulty in allowing it does not deserve an important place in the nosology of childhood. When primary it is almost always a slight affection, and when secondary it is but an epiphenomenon of an already dangerous disease, or the result of an active use of medical means. Lastly, it is often latent, escaping all investigation. We have always found it in an acute form. What we say of gastritis we may repeat of ramollissement. We find ourselves at variance here with a considerable number of practitioners, who consider this as one of the most grave affections of childhood. Our observations have in fact only led us to look upon it as a secondary lesion, and never as a primary disease, influencing the entire organism, revealing itself by special symptoms, and observing a regular progress. The *age* of the subjects who have formed the objects of our study is doubtless the cause of this difference of opinion."

M. Bouchut, alluding to young infants, denies the *gelatiniform ramollissement* of the mucous membrane of the stomach, upon which so much was written a few years since, to be a separate disease at all. He says it is never found alone, but always as a consequence of inflammation of the intestinal canal, during which abundant acid secretions take place, which act upon the gastric membrane purely in a chemical manner.

MM. R. and B. reserve all remarks upon tubercular diseases of the ab-

domen, and in 61 autopsies of non-tuberculous cases, found 21 examples of erythematous, four pseudo-membranous, one pustular, six ulcerative gastritis. In two cases eschars had formed, and in 27 there were various degrees of ramollissement. *Vomiting* is a chief symptom, but it is not always present, and the statement of authors that ramollissement is always attended with constant, severe and abundant vomiting is eroneous. The *thirst* is ardent and excessive, but the *tongue* is rarely red or dry, but mostly white and moist. *Diarrhœa* is usually present. In more than two-thirds of the cases cited the disease was induced by the use of tartar-emetic mixture or kermes mineral for the relief of the original disease; but these medicines must not be too indiscriminately proscribed, as in great numbers of children they produce no ill effect whatever. Strong and robust children are oftenest the subject of ordinary gastritis, and the very young, feeble, and cachectic of ramollissement. Meningitis is the disease in the course of which gastritis usually shows itself, then the eruptive fevers and thoracic or abdominal phlegmasiæ. If the child is strong enough, cupping or leeching the epigastrium is requisite. It should be covered with a cataplasm, and emollient drinks given. Icy drinks or fragments of ice allay the thirst. Opiates are useful. Total abstinence at first and afterwards small portions of milk.

2. *Inflammation and Ramollissement of the Intestines.*—Inflammation and ramollissement, especially of the large intestine, is one of the most common and destructive lesions of childhood. Including tuberculous cases, of every two children who die, in one will there be found lesion of the large intestine, and indeed it is rare for a child to die between two and five without manifesting such. M. Bouchut represents the disease however as almost special to children less than two years of age, but then he excludes tuberculous cases, as tubercles are not found in the intestines in sucking children. Although ulcers may be found in the whole course of the intestine, they are so especially in the sigmoid flexure and rectum. The following are the relative numbers of the non-tuberculous lesions observed. Erythematous, pseudo-membranous, or ulcerated inflammations of the small intestines 45, of the large 113; follicular inflammation of the small 90, of the large 64; ramollissement of the small 28, of the large 35. Lesions of the stomach may sometimes exist alone, but various parts of the intestines are usually simultaneously affected.

*Diarrhœa*, in abundant quantities, is a common *symptom*, although it is absent in about one case in twelve; and as a result of about 300 autopsies the authors observe that, of twelve children affected with considerable diarrhœa, in one only will the intestinal canal, on post-mortem examination, be found quite healthy. M. Bouchut justly objects to referring all diarrhœas, as Rilliet and Barthez do, to the presence of a phlegmasia, and describes two forms, the catarrhal or spasmodic, and the enteritic. He makes the following observations upon the connexion of *diarrhœa* with the process of *dentition*:—

"It may not be uninteresting to state this with more precision than has been done hitherto. In the cases of 110 infants we have enquired what has been the condition of the alimentary canal during the first dentition. A small number (26) have suffered no indisposition. In 38 there had been restlessness, colic,

and temporary diarrhœa, not severe enough to excite the fears of the parents. In 46 there was copious diarrhœa. In 19 of these it appeared at the same time as the irritation of the gums, and ceased on the cutting of the teeth. In 28 cases, where the teething was very difficult, the purging persisted, and took on all the characters of enteritic diarrhœa.

"It is difficult to determine satisfactorily the relation which exists between the process of detention and the irritation of the intestinal canal. According to some, the pain occasioned by the irritation of the gums occasions a nervous irritation, which augments the peristaltic action, and impedes the assimilation of food. The diarrhœa being then considered a nervous and sympathetic affection, others regard it as resulting from an extension of the inflammatory condition of the mucous membrane of the mouth to other portions of the canal. These opinions may be just, but they need not be adopted to the exclusion of each other. Diarrhœa dependent upon dentition seems at least at first to be a sympathetic affection; and it is only when it has become long-established that it takes on the characters of an inflammatory flux."

Inflammation of the intestinal mucous membrane (entero-colitis) is considered by Rilliet and Barthez under the following forms. (1.) *The acute primary normal form* which is usually but a trifling disease. (2.) The *acute secondary normal* form, which is the most frequent, occurring in the course of measles, scarlatina, &c. Its production is stated by the authors to occasionally arise from the injudicious use of *purgatives* during the primary disease. The lesions discovered after death do not always correspond with the symptoms observed during life. (3.) The *acute typhoid form* is a rare disease intermediate between normal enteritis and typhoid fever, and distinguished with difficulty from the latter. (4.) The *dysenteric form* is also rare, only seven cases having been observed, all of which exhibited very extensive ulcerations. (5.) The *cachectic or chronic* is a very fatal form, especially in hospital practice, and produces a degree of feebleness and wasting seen in no other disease besides tubercle. Its origin can usually be traced back to the period of dentition, weaning, or some sudden change of diet. The authors agree with M. Trousseau as to the *danger of neglecting diarrhœa* at the *period of dentition*. They consider the fears of arresting it are groundless, and that it should not be allowed to go on unchecked more than four or five days. In this chronic enteritis astringent enemata, as tannin or argent. nitr., are indicated, and M. Trousseau recommends the latter by the mouth, also ℞. Nitr. Arg. gr. ½, Aq. Dest. Syrup. ää ʒvj. divide into 8 or 10 doses. Tonics, such as calumba and cascarilla, or if the diarrhœa is obstinate, iron in the form of pernitrate or in chocolate are required. In mild cases, saccharate of lime, subnitrate of bismuth, or a little bicarb. sodæ, added to the milk, may be given as antacids. Hygienic and dietetic rules are of the last importance.

### *Peritonitis.*

Acute peritonitis is alone treated of, leaving the chronic until tuberculous diseases are considered. It is a less frequent disease than pericarditis, and much less so than pleurisy. The chief symptoms are marked tension and swelling of the belly, often offering resistance to pressure. When the disease is partial, there is to appearance a painful tumour formed. The pulse is very small, ranging from 120 to 140. The counte-

nance is pale, anxious, and shrunken. M. Bouchut observed in two cases a peculiarity in the respiration, which was remarkably short and incomplete, while every 8th or 10th inspiration was a very deep one, as if for the purpose of making up the deficiency of the others. Of the twelve cases referred to by R. and B. four were primary and eight secondary. It is a very fatal disease.

### *Hepatitis.*

This is a rare and mild disease in children. The symptoms are jaundice, tumefaction, and pain. *Jaundice* independently of this affection is not found in children, (except new-born infants, in whom too the liver and other abdominal organs are much engorged) independently of inflammation. The authors cannot allow that this is the dangerous disease it has been represented by Burns and Henke to occasionally be.

### *Nephritis.*

The authors observe that *albuminous* is not very easily distinguished from ordinary nephritis in the child, inasmuch as there is an absence of Bright's granulations, even when anasarca and albuminous urine had been observed long prior to death. The yellow colour of the third stage of ordinary nephritis nearly approximates to that observed in the albuminous form. In 23 out of 48 cases of nephritis the urine was found albuminous, and in 16 was not examined. There is not the same febrile action as in the simple nephritis of the adult; but in the albuminous form there is anasarca, which is often complicated with effusions into cavities, especially the pleura. The proportion of chronic to acute cases is much less than in the adult. One third of the whole cases occurred during the desquamation of scarlatina, exposure to cold seeming the exciting cause. It is more rare after measles. Children above five years are most liable. The *treatment* consists, in acute cases, in depletion, warm baths and purgatives. In the more chronic form, sudorifics and diaphoretics. Frequent vapour baths, prolonged to the induction of profuse sweating, have been useful in all forms. Digitalis, or nitrate of potass, may also be given, and cataplasms applied to the lumbar regions.

### *Inflammatory Affections of the Brain and Spinal Marrow.*

The authors do not allow that affections of the brain constitute so large a proportion of the diseases of children as they are generally stated to do.

1. *Simple Meningitis.*—Meningitis, when unconnected with tubercle, is a rare disease. Only six cases are alluded to. The chief diagnostic signs are intense headache, abundant vomiting, and high fever, rapidly followed by delirium, excessive anxiety and collapse. Active antiphlogistics can alone save the child.

2. *Affections of the Cerebral Sinuses.*—Five cases are added to the twelve already published by M. Tonnelé. The superior longitudinal sinus

is that usually affected. It is found more or less filled and distended with firm coagula, which sometimes too extend into the cerebral veins. Pus is also occasionally found in the centre of the coagulum or mixed with blood. The lining membrane, of the sinus usually retains its natural appearance but the cellular coat is much thickened. These concretions may determine hæmorrhages or effusions, but are denoted by no special symptoms. They are only found in the feeble or cachectic.

3. *Cerebral Congestion.*—Great difference of opinion prevails as to whether this is other than a secondary phenomenon, or even a mere post-mortem appearance. It has been found in the absence of all, and after quite opposite symptoms, and is certainly a less important sign of disease in the child than in the adult.

4. *Ramollissement* of the Brain, so frequent in the aged, is rarely if ever seen in the child as a disease sui generis. It has been found in children who have succumbed in various diseases, and in whose ventricles serum has existed, as also in the vicinity of old cerebral lesions. A case of idiopathic ramollissement is however related, and an example of it supervening upon encephalitis.

5. *Hypertrophy and Induration of the Brain.*—A general induration or increase of consistence is sometimes found without, or at others with, augmentation of bulk. The authors allude to the cases described by Laennec, Papavoine (in lead poisoning) and others, but do not state their own experience.

6. *Spinal Meningitis.*—Only one example is adduced, and, as in nearly all the cases related by other authors, it was complicated with tuberculous disease of the brain.

7. *Ramollissement of the Spinal Cord* is a more frequent lesion, but its existence may be simulated in any subject if the spinal cord is contused in opening the canal. It may manifest itself under three forms: as an acute disease with symptoms hardly to be distinguished from tetanus; an acute disease with symptoms resembling chorea, and as a chronic disease attended with more or less complete paralysis.

### *Articular Rheumatism.*

This is a rare affection in the child, and only occurs in the acute form. Ten cases, all occurring between the ages of 12 and 14, were met with by the authors. The disease is rendered much more severe when it becomes complicated with pericarditis or pleurisy, but even then recovery usually takes place. Leeches and oily embrocations in mild cases, and active depletion in severe ones, are indicated.

### *Cutaneous Inflammations.*

As the authors defer the description of the exanthemata, there is little here to detain us. We may extract a passage upon an interesting sub-

ject, namely, the *effects produced upon the internal organs by the repulsion of cutaneous eruptions*, especially those of the scalp:—

"We commence by observing that many of the facts cited as proofs of the danger of repulsion will not bear analysis. Generally no exact account is given of the state of the general health prior to the disappearance of the eruption, so that it is difficult to determine whether the production of the internal affection is the effect or the cause of the disappearance of the external disease. On the other hand, we have been able to assure ourselves, from observing a great number of cases, that in reality the internal phlegmasia is almost always anterior to the other. We feel obliged then to restrict the influence which is generally accorded to the retrocession of dartres and exanthemata, and which, from age to age, from school to school, has been constituted a corner-stone of the pathological edifice. We do not deny the existence of the coincidence of serious accidents, and the sudden disappearance of cutaneous disease, but we maintain that this is much less frequent than is generally supposed, and may be sometimes explained by another theory than that of retrocession.

* * * * *

"Experience teaches us that when the inflammation occupies but a limited surface, we may hasten its disappearance by appropriate means. On the other hand, when it is very extensive, the rapid fall of the whole of the crusts which cover the scalp, and the contact of the air with a vast suppurating surface, may give rise to dangerous results, as the production of cerebral disease. As we have said, other explanations beside that of retrocession may be adduced. The pus secreted by the inflamed parts, and which heretofore concreted so as to form the inner surface of the crusts, may be transported to the membranes, or the small veins communicating between the interior and exterior of the cranium may propagate the inflammation to the pia mater; or these accidents may result from the state of congestion which hot topical applications have induced in the brain. To whichever of these causes the effect may be due, or if we admit retrocession, reason points out that the eruption must only be gradually healed, that too hot applications should not be used, and that a derivative action upon the intestinal canal should be maintained.

"If the explanation of these effects resulting from the disappearance of acute affections of the skin is difficult, how much more so is it in the case of one of a chronic nature. The time which intervenes between the disappearance of the one and the development of the other, and the possibility of the internal disease having arisen from so many different causes, generally render the solution of the problem impossible. Prudence teaches us that it is always better to act as if the possibility of the fact was admitted, and it is right to operate a revulsion upon another portion of the economy when endeavouring to relieve a cutaneous disease which has persisted for several years. So too, it may be necessary to favour the return of a cutaneous affection, when its disappearance is attended with a derangement of functions, which did not exist while it was present.

"It seems to us proper to avoid any active treatment in diseases of the scalp, 1, when it succeeds to an obstinate ophthalmia, which has amended upon its appearance; 2, when, soon after the treatment has commenced, the eyelids and conjunctiva become injected, and an ophthalmia seems likely to occur; 3, when the development of the eruption has occurred in a very young and delicate child, whose general health seems sensibly improved since its appearance; 4, when the diminution of secretion is followed by general symptoms, however slight, such as loss of appetite, restlessness, moroseness, febrile action, &c."

*Erysipelas.*—The authors remark as a very singular fact that children, who are so liable to chronic inflammations of the face and scalp, are seldom the subjects of erysipelas of the face, and that in the cases which do

occur it is very rare to observe cerebral complications. The erysipelas of new-born infants, generally commencing at the umbilicus, is a very fatal disease in hospitals.

*Cutaneous Diphtheritis.*—This curious affection, noticed by Bretonneau, has been especially described by Trousseau. It consists in a pseudo-membranous inflammation of the skin, prevailing during the epidemics of pseudo-membranous angina, affecting any part which becomes denuded of the cuticle, as by blisters, excoriation, friction, &c.

### *Induration of the Cellular Tissue.*

This is a common disease of new-born infants in France, but M. Bouchut states, he is quite unable to account for the great difference in the descriptions furnished by those who have written upon it. That by Billard he considers is nearest the truth. Sometimes the induration occupies the entire surface of the body, but at others only the limbs or the face. It is, in fact, an *œdema*, for more or less serosity is found in the cellular tissue, which M. Chevreul observed spontaneously coagulated when exposed to the air. The principal vessels of the parts affected are permeable and congested with blood, so as to produce great distension of the tissues. The cutaneous capillaries, however, are devoid of blood, and appear obliterated, although injection can be forced into them after death. The lungs are congested, and the skin frequently jaundiced, at other times reddish or of a dirty white, and very cold to the touch. The children suffer much and utter, from time to time, a shrill cry, like the hydrocephalic cry, but not so loud. The disease exists sometimes at birth, and at others comes on between the first and twelfth day. It continues from two to six days, and is fatal when very extensive. It cannot be confounded with the induration of the adipose substance, which takes place in some children just about to die, nor with the cadaveric induration of the same structure. The disease is seldom observed in other than in foundlings, and the children of the very poor. In its partial form it is now and then seen in older children and in adults.

## CLASS II.—DROPSIES.

Accumulations of fluid in the cavities, and infiltrations into the cellular tissue, are very common affections of children, and, as in the adult, they may be either of an active or passive nature. Dropsies in children are however almost always but *secondary diseases*, and their acute or chronic nature, and degree of gravity, depend upon the nature of the primary affection producing them. As is the case with tubercle and inflammation, dropsical effusion may manifest itself simultaneously or consecutively in various organs.

The *Causes* of dropsies are thus enumerated:—

"1. A sudden chill, or living in damp places, &c. The dropsy, whether general or local, is then often acute. 2. Inflammations of organs, producing active febrile dropsy, which is generally confined to the organ affected, although sometimes developing itself at another point. 3. Specific inflammations, and

especially the eruptive fevers. Here the dropsy is hyperacute, acute, or cachectic, according to the period when it occurs. It is frequently general, or attacks a great number of organs at once. It is often dangerous. 4. Albuminuria. Under the influence of this cause the dropsy is sometimes hyperacute, oftener acute or chronic. Confined to the cellular tissue it may affect many organs, and is a grave disease. 5. Deterioration of the constitution by a disease of long duration, as tubercle, chronic disease of the digestive organs, intermittent fever, and in general all affections which produce an impoverishment and a defective plasticity of the blood. The dropsy is cachectic, occupying usually but one or part of an organ, and very rarely several organs. The disease producing it, not the dropsy, is the source of danger. 6. An obstacle to the venous circulation. This frequent cause of dropsy seldom exists alone in the child, but is accompanied by some serious disease predisposing to it, as hypertrophy of the heart, compression of the veins by tubercles, &c.

"In studying the causes we must not forget the influence of age and constitution; and we may repeat the remark we made respecting phlegmasiæ, that robust boys, aged above six years, are most liable to the acute active forms, while girls, and feeble children of less than six years old, are most liable to the chronic and cachectic forms.

"Several of these causes may unite in affecting the same individual. Thus a dropsy following an eruptive fever may likewise arise from an albuminous nephritis; one caused by this last affection may also depend upon hypertrophy of the heart; while one arising from a tuberculous cachexia may likewise be due to venous compression."

### *Œdema of the Lungs.*

This is a very common affection in children, although, owing to the obscurity of the symptoms, not often detected, which is of the less consequence, as the primary disease is the real object of treatment. The effusion varies from a few drops to a very large quantity, pouring out on incision. In the 77 autopsies, in which it was observed by the authors, it was found generally to occupy the upper lobes. Secondary pneumonia and scarlatina were usually the producing diseases, and albuminuria frequently coexisted.

### *Hydrothorax.*

From the late period at which the symptoms often appear, or their entire absence, there is reason to believe the effusion (which may amount to a pint and more on each side,) in many cases, occurs not long prior to death. Scarlatina and nephritis in the acute form, and tubercle in the cachectic form, were the usual primary diseases in the 36 cases examined by the authors.

The authors met with but six cases of augmented quantity of fluid in the *pericardium* (4 to 10 ounces) without accompanying marks of inflammation. The heart was however, in most, large and firm.

### *Ascites.*

When the quantity of fluid is small, it is often difficult of detection during life. The child should be held horizontally with its belly downwards, and the examination made near the umbilicus. In very young children, with large bellies, and especially if the parietes are œdematous,

we may be often led to believe fluctuation exists when it does not. Retention of urine may be mistaken for ascites. In its acute form the disease has all the characters of secondary peritonitis, but after death the intestines are found pale and colourless. Albuminuria, scarlatina, and rubeola are the usual primary diseases. Of 25 autopsies, 20 occurred in boys, and 5 in girls, 7 in children less, and 18 more, than six years of age. Paracentesis is rarely if ever advisable.

### *Hydrocephalus.*

This the authors define as a non-inflammatory effusion into the cranial cavities. They observe that it may be thought strange that they have devoted so little space to the consideration of the *acute form of the disease*, which usually occupies so much of the attention of writers on diseases of children. But they regard it as a mere epiphenomenon of *tubercular meningitis*. Without denying it may never be primary, they have never met with it but in a secondary form, as after nephritis, scarlatina, &c.

The changes which are operated upon the cranium and brain in the *chronic* form of the disease are set forth at length, but with these our readers must be well acquainted. The authors have never, in any form of the disease, been enabled to detect the sounds said by the American writers to be heard in auscultation of the cranium. Errors in diagnosis may arise—1, from a very small and thin face causing the head to appear proportionally large; 2, the thickening of the cranium by rickets. Upon examining the cranium this thickening will be found much more irregular than in hydrocephalus; 3, cerebral hypertrophy may cause an augmented size of the cranium. The authors speak very sceptically of the *curability* of this affection, and have no experience of the efficacy of puncture or compression. They have never seen it other than as a sedentary affection, it having been generally consequent upon tuberculous tumours, which were so placed as to compress the sinuses or principal veins.

### *Anasarca.*

This a common disease in children, and Rilliet and Barthez have met with it in one-eighth of the entire number of their patients. Only six cases, however, have been met with of the *primary* or idiopathic form. The *secondary* or *consecutive form* is sometimes general, in others partial. Of 155 cases it was acute in 79, and chronic in 76. The *acute* form usually comes on at an early stage of the primary malady, and is rapid and regular in its course. The *chronic* and *cachectic* form, occurring in those of feeble powers, or weakened by long illness, is variable and oscillatory in its progress. The primary disease may be an ordinary phlegmasia, inducing a plethoric condition of the general system, as pneumonia, pleurisy, angina, bronchitis. In such cases the dropsy is usually partial, acute, and of short duration. Local pressure upon the venous system may assist in these cases, and thus anasarca of the face, resulting from pressure of the vena cava superior by a pneumonia of the apex of the right lung, is not infrequent. One of the most frequent causes of acute or chronic anasarca, as already stated, is *nephritis*, which produces a severe

and persistent form of the disease. But the most frequent cause of all, is *scarlatina*, and the other specific inflammations :—

"Its mode of production is extremely complex, and explains to us why the infiltration is more frequent in certain specific affections than in others. Thus, in several of these diseases there exists a violent inflammation of the skin, which, as in erysipelas, causes considerable fluxion into the subcutaneous tissue. In that case the infiltration is truly active, very inflammatory, and accompanies the eruption. It is violent in proportion to the intensity of the eruption, and to it should be referred the active and painful subcutaneous swelling in variola, the general turgidity of scarlatina, and that, less considerable, of measles. But this immediate action of the skin on the cellular tissue is not the only one. The membrane seriously injured in its texture retains an anormal predisposition which acts for a long period in preventing the regularity of its functions. Hence result those dropsies consequent upon the eruptive fevers, and which manifest themselves especially at the period of desquamation. But on examining the nature of this predisposition, we discover that it is not the most violent eruption that is most often followed by anasarca, so that it cannot be the intensity of the cutaneous inflammation which determines the secondary infiltration. Variola, in fact, is hardly ever followed by anasarca, while scarlatina is so very frequently. We believe it is the seat rather than the intensity or nature of the inflammation, which leads to this result. The seat of variola is the cutaneous follicles, that of rubeola the mucous body, or rather the superficial vascular network; while scarlatina appears to be an inflammation of the subcutaneous lymphatic tissue, whose functions are at once exhalant and absorbent. This is the cause of the anasarca; for, by reason of the lesion of the lymphatic tissue, the cutaneous exhalation is imperfectly performed, and upon its suppression by the access of even slight cold, an effusion results. If this occurs in rubeola or variola, it is because the cutaneous inflammation is sometimes propagated to the lymphatic tissue.

"This, then, is one of the causes of the anasarca in eruptive fevers. Add to this the deterioration produced by a general disease, and the evident change which occurs in the blood in these affections, as in all specific inflammations, of which a well-known result is a loss or diminution of its plasticity. Moreover, albuminous nephritis is frequently developed simultaneously with, or subsequently to, the original malady; while, in particular cases, various causes of obstruction of the circulation may also exist." 832.

Besides the causes of anasarca hitherto alluded to, we must notice a frequent one, viz. the *cachectic state*, induced by a severe or prolonged disease, attended with diminished plasticity of blood and apyretic passive effusion. It is usually partial, and frequently appears and disappears. Chronic gastro-enteric disease, ramollissement, tubercle, prolonged intermittents, &c., give rise to this form. The species and prevalence of anasarca seem, in some measure, occasionally to depend upon epedemic or seasonal influences.

As to the *age* most liable, of the 155 patients, 91 were less, and 64 more than six years of age. The *sexes* seem about equally affected, the boys being more liable to the acute, the girls to the chronic form.

The *treatment* of secondary anasarca will chiefly depend upon the nature and stage of the primary affection and the powers of the patients. Thus depletion, diuretics, especially digitalis, vapour-baths, aperients, or tonics, are indicated in different cases.

## CLASS III.—HÆMORRHAGES.

Hæmorrhages compared to dropsical effusions are of rare occurrence in the child, which may seem the more surprising, as they both arise from identical causes. The predominance of the lymphatic temperament explains the fact. Primary and active hæmorrhage hardly ever occurs, at least in very young children, passive hæmorrhage in the secondary form being that usually met with. The prognosis much depends upon the form. Primary hæmorrhage admits of cure in many cases. Acute secondary hæmorrhage is a much graver disease, especially if it occurs in several organs, and the primary affection is a specific one. It is of the worst possible augury when it occurs in the course of chronic or cachectic diseases. We may cursorily notice the varieties mentioned by Rilliet and Barthez.

1. *Hæmoptysis and Pulmonary Apoplexy.*—The former of these varieties of pulmonary hæmorrhage is very rare in children. The authors have met with but two cases of primary hæmoptysis, occurring in young girls, four cases occurring at a late stage of phthisis, and four accompanying gangrene of the lung. In 22 instances, *apoplexy of the lungs* has been observed. Most of the cases occurred in boys who had passed their fifth year, and the diseases which preceded it were tubercle, variola, scarlatina, nephritis, colitis, and secondary pneumonia.

2. *Epistaxis.*—Nothwithstanding this affection in a slight degree is so frequent in children, the primary form in any excess is rarely met with, and even as a secondary disease it is much more rare than in the adult. It occurs chiefly in the course of eruptive fevers, typhoid and intermittent fever and hooping-cough. It is one of the gravest symptoms of purpura.

3. *Hæmatemesis* has never been observed by the authors in its primary form, and even in the cases recorded of its secondary form, they believe the organ has only acted as a receptacle for blood derived from other sources. Although much more frequent than this, *intestinal* hæmorrhage is yet a very rare affection, following eruptive and typhoid fevers, &c.

4. *Apoplexy.*—Of this the authors especially notice two forms, that in which the blood is effused into the arachnoid, and that in which it is effused into the substance of the brain. Among the causes enumerated are—1. Too violent treatment of diseases of the scalp. 2. Affections of the sinuses. 3. Obstruction of the vena cava superior by bronchial glands. 4. Compression of vessels by abdominal engorgements. 5. The cachectic state produced by prior maladies, diminishing the plasticity of the blood. 6. Occasionally, but very rarely, the disease is primary. Of *Meningeal Apoplexy* 17 cases were examined. The effused blood is represented as undergoing transformation into false membranes, sometimes resembling the arachnoid in texture, and at others being fibrous. When death occurs from cerebral tubercles in a child of two years old or less, bloody, not serous effusion, into the arachnoid is found. However common *cerebral apoplexy* is in the aged, it is an unimportant disease in the child, occurring

as it does just before death, or in the course of mortal disease. Fourteen cases only are referred to, eight of which occurred to the authors. The paralytic symptoms, observed in the adult, are rarely seen in the child, and the disease is often latent, and its diagnosis seldom possible.

5. *Purpura.*—This affection, as in adults, exists in the two forms of *simplex* and *hæmorragica*. The former when primary, which it rarely is, is always curable, but when secondary, occurring as it generally does, in the course of severe chronic disease, it is an indication of a lesion of the blood which presages their fatal termination. When the *hæmorrhagic* form is primary, recovery also generally occurs, but if constitutional, or secondary to other diseases, a very bad prognostic is to be entertained. The hæmorrhagic form is much more common in children who have passed their fifth year than in those who have not. Simple purpura is also found in much younger children. Epistaxis, buccal and intestinal hæmorrhages, are those which usually accompany it. Hæmaturia and hæmoptysis are much rarer. Eruptive fevers, and especially variola, are the most frequent primary diseases.

## CLASS IV.—GANGRENES.

Since these affections are almost always fatal in children, it is fortunate they are seldom met with. Any of the tissues of the economy may become affected, but the mouth, the pharynx, the lungs, and the skin, are the parts most liable. It is seldom that gangrenes exist alone, pneumonia, entero-colitis, or, though seldomer, tuberculization, usually accompanying them; nor is it rare to see several organs simultaneously gangrened. Gangrene is very rapid in its progress in the child, is never a primary disease, and chiefly affects the poor and miserable, who have been exposed to eruptive fevers, generally rubeola. The disease especially attacks children between three and five, and is sometimes endemic. Topical remedies, and an invigorating regimen, are usually indicated in its treatment.

1. *Gangrene of the Lungs.*—Sixteen cases of this are referred to, and the pathological anatomy described at length; but as this is the same as in the adult we need not notice it. Other lesions of the lung also commonly co-exist, as lobular pneumonia, carnification, œdema, &c. The diagnosis is usually difficult, the gangrenous odor of the breath being an important element in forming it.

2. *Gangrene of the Mouth.*—Twenty-eight cases form the foundation of the authors' observations, this being the most common site of the disease in children, to whom it is peculiar. It is a frightful affection, almost always mortal. In six cases the authors entered into a minute examination of the vessels of the gangrened parts. They found the walls of these to become somewhat thickened as they approached the swelling surrounding the gangrened parts, and plugged firmly with coagula as soon as they reached the latter. Of all coincident diseases pneumonia is the most common. It is remarkable that the children continue to eat heartily to

the last. The distinction of this disease from *stomatitis* is chiefly formed by observing the absence of pseudo-membrane, the great and rapid extension of the ulceration, the accompanying hard engorgement, the abundant salivation, the eschar in the cheek or perforation of its substance, and destruction of the bones and teeth. The gangrenous odour too is more powerful. Rubeola is the most common antecedent disease, and it seldom follows scarlatina or variola. Free cauterization to some distance beyond the gangrened part offers the only chance of relief.

3. *Gangrene of Pharynx.*—This is a rare disease, for M. Bretonneau has proved, that the affection so frequently represented as gangrenous angina, was, in the great majority of cases, only a *pseudo-membranous angina*, the putrid false membranes being mistaken for eschars. This gangrene exists in a circumscribed or diffused form, and it usually appears at the termination of a secondary pneumonia, typhus, &c.; and other organs are often simultaneously affected.

4. *Gangrene of the Skin.*—This affection may show itself in the form of what is termed *spontaneous gangrene*, attacking the lower extremities and arising from a deposition of coagula in the arteries of the limb, which extend into the iliac and even the aorta; and *diffused gangrene*, which affects various portions of the surface, as the face, sacrum, vulva, &c. The latter may result from pressure, attacks the surface of blisters, or appears spontaneously—in all cases, however, coming on in the course of some other disease, especially the eruptive fevers. It was epidemic in the Children's Hospital at Paris, 1841.

We must defer the consideration of the remaining diseases until our next Number.

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A COLLECTION OF CASES OF APOPLEXY, WITH AN EXPLANATORY INTRODUCTION. By *Edward Copeman*, Surgeon. 8vo. pp. 205. London: Churchill, 1845.

THE scope and object of this work are thus distinctly explained by the author: "The following collection of cases is published with the view of furnishing sufficient data for determining the comparative merits of different modes of treating Apoplexy, and for judging of the expediency of resorting to bleeding for the cure of that disease. It has long been my opinion that the popular, as well as professional, prejudice in favor of bleeding in affections of the brain is not justified by the result of the practice: and in order to convince myself, I collected the following cases. They are transcribed from various books and journals; a few are from my own case book; and I have purposely avoided introducing any author's remarks or comments, that each person who examines them may form an unbiassed opinion."

Before we proceed to give some account of its contents, it may be as well to recall to our readers' minds that the term Apoplexy simply indicates

a particular assemblage of symptoms—the most prominent of which is a sudden loss of consciousness and voluntary motion, the breathing and circulation continuing—but does not suggest any idea as to the cause of these symptoms, or even as to the condition of the system in which they may occur; whether this be one of fulness or of debility, of plethora or of exhaustion. And yet it is but too true, that many medical men are apt, on all occasions, to associate the idea of an apoplectic seizure with an engorged state of the cerebral bloodvessels, and thus are led to regard the detraction of blood as almost invariably necessary for the removal of the oppression thereby induced. This, once common, mistake has indeed been corrected in all the standard treatises on the Practice of Medicine that have appeared within the last twenty years; but still there is a lurking tendency with many practitioners to resort, too indiscriminately, to bloodletting, whenever a person falls down in what is called a *fit*. With a view of exposing the fallacy and danger of this practice, Mr. Copeman has collected together no fewer than 250 cases, extracted from various works; and, although we must regret that they have not been arranged upon some definite plan, for the sake of convenient reference, the catalogue cannot fail to prove useful to the bibliographical student.

The author has scarcely done himself justice, we think, in not having extended his "introductory remarks;" for the impression, left upon our mind by their perusal, is that he is well acquainted with his subject, and fully competent to have treated it at greater length.

After pointing out that all *ages* are liable to attacks of Apoplexy, but that males are much more frequently affected than females (out of his 250 cases, 170 occurred in males,) he makes the following useful remarks on the pathology of the disease:—

"The morbid appearances found in persons who have died of apoplexy are exceedingly diversified, and by no means favour the idea that fulness of blood or rupture of a vessel is always the cause of death. The number of deaths in which the *post mortem* appearances are recorded is 156, and in 81 only was there extravasation of blood in the brain. In 10 cases there was found no diseased appearance of the brain at all, and in the remaining 65, the morbid appearances were, hypertrophy of the heart, disease of the aorta, softening of the brain, effusion of serum into the ventricles, or between the membranes, congestion of vessels in the brain, hydatids in the brain, inflammation of the brain, ossified arteries, abscess of the brain, diseased kidneys, brain hardened, cerebral vessels varicose, tubercle in the cerebellum, inflamed stomach, indurated liver, inflammation and ulceration of the small intestines, tumour in the brain." 4.

As to the prognosis in Apoplexy, we need scarcely say that very generally it must be decidedly unfavourable.

Of the 250 cases, 68 only recovered; 7 partially recovered; and 175 died—a very great mortality certainly; proving, as our author observes, "either that the proximate causes of the disease are beyond the reach of art, or that the measures usually adopted as remedies are inapplicable, inefficient, or prejudicial."

The following statement, and the practical deductions which are drawn from it, well deserve attentive consideration; they suggest a very useful practical lesson:—

"The universal *remedy*, as it is called, for apoplexy is bloodletting; at least so generally has it been employed, that of 155 cases in which the treatment is specified, 129 were bled, and only 26 were not: of the 129 who were bled, 51 recovered and 78 died—the cures being 1 in 2½, the deaths 1 in 1⅔,—of the 26 who were not bled, 18 were cured and 8 died, the proportion of cures being 1 in 1½, and of deaths 1 in 3¼. But the mortality varies a good deal according to the particular method in which bloodletting was performed. In two cases the temporal artery was opened, both died. In 11 cases, cupping only was employed; 6 were cured and 5 died. Fourteen were treated by leeching; 4 cured, 10 died. Seventeen were bled in the foot, a plan strongly recommended by M. Portal; of which 13 were cured, and 4 died. Eighty-five were bled generally and copiously, of which number 28 recovered and 57 died; that is to say, two in every three cases terminated fatally. If we subtract the number of cases treated by bleeding in the foot, a plan of bleeding mild in its operation, and acting, probably, more on the principle of derivation than of materially lessening the quantity of blood in the system, we shall find that of 112 cases, 38 recovered and 74 died; reducing the proportion of cures to about 1 in 3, and increasing the proportion of deaths to 1 to 1½.

"From these facts it appears, that bleeding, generally speaking, is so ineffectual a means of preventing the fatal termination of apoplexy, that it scarcely deserves the name of a *remedy* for this disease. That where the temporal artery is opened the case terminates fatally; but as there are only two cases reported in which this method was exclusively employed, there are not sufficient data for establishing the universal fatality of this mode of treatment: although it may be fair to conjecture, that it is by no means desirable to abstract arterial blood from the brain. The bleeding in the foot was the most successful mode of abstracting blood. That the treatment without loss of blood was attended with the most success; and that the mortality of the disease increased in proportion to the extent to which the bleeding was carried; the more copious the loss of blood, the more fatal the disease." 7.

Even in cases, where we have reason to suspect extravasation of blood within the cranium, the practice of having immediate recourse to bloodletting is of very questionable propriety in many instances: "the mischief is done, the blood is effused, the system has received a great shock, and bleeding will not remove the extravasated blood." This is perfectly just; and certainly, unless we have reason to believe that there is co-existent arterial over-action or great venous engorgement, the mere suspected presence of a sanguineous coagulum on the surface, or within the substance, of the brain, is not *per se* a sufficient ground for a copious abstraction of blood. Mr. Copeman suggests that the extravasation may be promoted, rather than counteracted, by the greater thinness of the blood, and its diminished tendency to coagulate, induced by large bleedings. However this may be, it appears to be both safer and more judicious practice to allow (in some instances, at least) the system to recover from the immediate shock of the attack, before we lower the system by depletion. Much judgment, and not a little firmness and resolution too, will often be required, on the part of the medical man, to resist the wishes and expectations of the attendants, and to refuse to follow a plan that is almost universally followed, that of immediately opening a vein in the arm, and drawing blood, no matter what the concomitant symptoms may be, whether they indicate over-action or exhaustion. In many of the cases adduced by our author, there was a manifest deterioration of the symptoms—of the paralysis more particularly—after the patients had been copiously bled.

Mr. Copeman suggests the following sensible directions to guide the practitioner as to the plan he should adopt in the treatment of an apoplectic seizure :—

"Under some states of constitutional disturbance, there may be, and undoubtedly is, a disposition for blood to be sent to the head, and an effort made to overfill the vessels of the brain: but when this is the case, I believe it will always be apparent by visible distension of the external vessels of the head and neck; there is so much obstruction to the entrance of more blood within the skull, and such free communication between the internal and external blood-vessels of the head, that when there is a disposition to greater fulness within, the external vessels will act as safety-valves, and there will be evident distension without. I therefore consider it as a practical rule, that if the vessels of the brain are unduly distended, it will be evidenced by fulness of the external vessels of the head; and that, unless we discover the latter, we are not justified in drawing blood for the relief of the supposed existence of the former. In my own opinion, the only cases of apoplexy in which bleeding is proper, are those which occur in plethoric habits, and where, in addition to the symptoms of what is generally understood by a full habit, there is evident distension or fulness of the superficial vessels of the head and neck. Neither do I consider that in these cases, unless there be inflammation of the brain, (which I apprehend is rarely the case,) it is necessary to carry the bleeding beyond the point of relieving entirely the external visible fulness of vessels, or congestion of the lungs from impeded circulation; beyond this we weaken the body by abstraction of blood, without lessening the quantity circulating in the brain; the vessels of the brain must always be full, and when we have removed the tendency to force an undue quantity of blood into them, we have done all we are required to do as a relief from pressure." 12.

He considers that the state of the pulse is a very uncertain criterion of the necessity of bleeding in Apoplexy. This opinion is, to a certain extent, quite true; and yet we must never omit to ascertain the force of the circulation, before determining what course of treatment to pursue. It may be worthy of notice here, that the strength of the heart's impulse is a much safer guide in this respect than the condition of the arterial pulse: and indeed it may be laid down as a general rule, that in all cases of disease, where there is any room for doubt as to the propriety of bloodletting, the practitioner should invariably examine the state of the heart, with his ear as well as with his hand. Were this simple plan universally followed, much serious mischief might be avoided in the treatment not only of Apoplexy but of many other disorders :—

"When serious extravasation of blood has taken place, or when apoplexy occurs as the result of organic diseases of the brain, such as tumour, softening, abscess, &c., external signs of fulness are seldom present; indeed we may state that, in a great majority of such cases, the symptoms are strongly indicative of a prostrated condition of the system—the pulse is slow, sometimes intermitting; it may be either small or full, but its fulness is more like what we might suppose to arise, from the heart making efforts to propel the blood through passive tubes which had lost their natural elasticity for want of nervous influence; it is what I should rather call a *large* pulse; the countenance is often pale and covered with cold perspiration; the extremities are cold, the muscular system relaxed; the breathing laboured, and nervous power generally almost destroyed. I have myself observed, but perhaps it requires further confirmation, that the pupils being at first very much contracted and afterwards as much dilated, is a sign of fatal apoplexy." 13.

The leading therapeutic inference which Mr. Copeman draws from the 250 cases, whole histories he has collected together, is, that the chances of recovery from an apoplectic seizure are decidedly greater when general bloodletting is not employed. In not a few of them, where the attack supervened upon a full meal, the use of emetics was found to be strikingly beneficial. In some, where the powers of the system were visibly much depressed, the administration of stimulants, internal as well as external, powerfully contributed to remove the alarming symptoms; a blister or sinapism to the nape of the neck, and repeated doses of Ammonia, if the patient retains the power to swallow, are often of singular benefit. Purgatives appear to have been of essential service in most of the cases that recovered. Of this class of remedies, Croton oil and turpentine enemata are perhaps, on the whole, the best adapted to apoplectic cases.

We shall now select two or three of what appear to us the most interesting examples of the truth of these remarks :—

CASE.—*Apoplectic attack; alarming state; sudden recovery after vomiting a large quantity of fœtid bile.*

"A gentleman, who had long shown symptoms of what would have been termed 'Ramollissement de Cerveau,' fell down in a fit of apoplexy, at the age of 69, and not the slightest impression was made by cupping, leeching, blisters, enemas, and all the means which a trio of physicians could suggest. One left the patient for dead, after taking four ounces of blood from the head; and he was apparently in articulo mortis, after 48 hours of general paralysis, total insensibility, stertorous breathing, glassy eyes, and dead 'rattles' in the throat! The physician took his leave at twelve o'clock at night, requesting to be informed in the morning at what hour the patient died. No message having been sent, the physician called in the morning, and found to his no small surprise, the patient at his breakfast, quite sensible and with the full power of all his muscles! The patient soon after this, disgorged some pints of fetid bile, and had no return of apoplectic or paralytic symptoms.—*Medico-Chir. Review.* Vol. viii. p. 455.

In the following very interesting report—which well displays the quickness of perception and great practical sagacity of Dr. Johnson—the attack seems to have been connected with a retrocedent or misplaced gouty affection :—

CASE.—*Insensibility and immobility followed by violent tremors; great tenderness of the epigastrium; partial consciousness after bleeding: great relief after vomiting.*

"I was requested to visit a gentleman said to be in a dying state. I found him apparently without sensation, his eyes opened and turned up, his hands clenched, and his body alternately motionless, and agitated by sudden and universal tremors, which caused the bed to shake beneath him. He was a stranger, and there was no one present who could give a history of his case. In order to explore into its nature, I placed my hand upon his epigastrium; but scarcely had I touched the skin when he started up as though a bullet had been driven through him. Uncertain whether the coincidence might not be accidental, I repeated the experiment several times, and at each time the slightest pressure was sufficient to throw the whole frame into immediate and violent, though brief convulsions. Sufficient evidence was thus afforded of the seat of the disease, but not of the precise nature of the irritation. As his pulse was active, I bled him freely, and imme-

diately afterwards applied a large sinapism over the region of his stomach. Consciousness was so far restored a few minutes after the bleeding, that upon being asked in a loud voice if he felt sickness or pain in the stomach, he nodded in the affirmative. An injection of assafœtida was now administered; and under the united influence of this remedy and the mustard plaister, he revived to some knowledge of his situation, and was able to drink very freely of warm water, which I urged upon him. This soon produced the discharge of a large quantity of acid liquors from his stomach, and restored him for a time to complete consciousness. He now told me that he was subject to gout, of which he had recently an attack in his foot, but had relieved himself by bathing the affected part with hot vinegar. The nature of the case was evident. While he was yet speaking, he was seized with a sudden spasm of the stomach, which threw him into his former state; and this alternation of consciousness and insensibility was repeated several times within the course of a few minutes, each return of pain being so severe as at first to throw the whole nervous system into violent agitation, and then to overwhelm it for a time in complete torpor. I now applied sinapisms to the feet, and gave a mixture of laudanum and the aromatic spirits of ammonia; and at the end of about four hours from the commencement of the attack, left my patient very greatly relieved. A dose of the compound tincture of rhubarb, with a proper regulation of the diet, was afterwards sufficient to complete the cure.—*Medico-Chir. Review*, vol. xii. pp. 251 and 252." 44.

The next example we select is from Dr. Abercrombie's classical work on Diseases of the Brain: venesection was practised, the pulse being "of good strength and a little frequent."—

CASE.—*Second Apoplectic attack after an interval of four years in a patient upwards of 80 years of age; coma alternating with convulsions; bleeding from the arm, cold to the head, and purgatives; recovery.*

"A lady, aged 82, on the morning of Sunday, 8th of March, 1818, complained of headache, but went to church. While in church she lost her recollection, talked incoherently, and was brought home with difficulty, being unable to stand. She was still incoherent, and partially comatose; and when put to bed was seized with violent convulsion, which affected chiefly her face and the left side of her body. The convulsions recurred frequently, leaving her in the intervals in a state of profound coma, and the left side appeared to be paralytic. The pulse was of good strength, and a little frequent. She was bled to twenty ounces; cold was applied to her head, and an active purgative was given as soon as she could swallow. On the following day there was little change; more purgative medicine was given. On the 10th the coma was diminished, but it was succeeded by much unmanageable restlessness with incoherence and some convulsion; pulse 112. More purgative medicine was given; and small doses of the tartrate of antimony seemed to be very beneficial. On the 11th there was little change, but on the 12th she was much improved, began to know her friends, and her pulse was coming down. In a few days more she was in her usual health, and lived for several years. This lady had also suffered an apoplectic attack in 1814." 80.

The actual pathological state or cause of death in the following case, it is not easy to determine by the symptoms during life; and, as there was no examination after death, there will probably be some difference of opinion respecting it:—

CASE.—*Doubtful seizure; the symptoms partaking more of the character of syncope from heart-disease than of apoplexy; death.*

"On the 25th December, 1806, a corpulent and robust man, the master of

a Berwick smack, in going aboard his vessel, fell into the harbour. He was under water nearly a minute, and with some difficulty he got on board: but he was apparently so little injured, that he first changed his clothes in his cabin, and then walked home. I was sent for by him at one o'clock, shortly after the accident happened, and found him chilly, but not complaining, unless slightly of *his left* shoulder; his pulse was not affected; he *was rather faint;* he appeared so little injured, that nothing seemed necessary but to order him to bed, the sooner to restore the heat, and to give him some warm wine and water. I was again sent for at three o'clock. He was lying upon his right side, his head, from choice, low, and he was breathing rather hurriedly, and had a constant short cough: his extremities were cold; his pulse, at the wrist, was distinct; his countenance was of a leaden paleness; his lips were livid. He complained of considerable uneasiness in his chest, immediately under the left nipple, and of the pain of his shoulder. An attempt had been made, before I arrived, to draw blood both from the right and left arm: but he told us, that surgeons on various occasions had in vain attempted to draw blood from him. I perceived that he was not without a degree of stupor; and, as his breathing was becoming more hurried, I had the temporal artery opened, and the blood jetted from it darker than I ever saw venous blood. When about two cupfuls were procured, he complained of the inconvenience of the blood trickling into his eyes. I assisted him in turning to his left side, and his breathing became irregular, and stertorous; colourless froth was forced from his mouth, and the blood ceased to flow from the temporal artery. The froth worked up after his breathing stopped, and he died, as I was attempting to raise his head, without a groan or a convulsion. —*Cheyne on Apoplexy*, p. 92." 87.

This case is very interesting, and deserves to be attentively and critically examined. It possesses few of the characters of genuine Apoplexy. The patient was not unconscious or insensible, until shortly before death. He complained, it will be observed, of a pain under the left nipple, and uneasiness in the left shoulder; he became faint; his lips were livid, and his extremities cold. The symptoms seem to have become decidedly worse after the bleeding. As we have intimated above, we strongly suspect that this was a case of *cardiac* rather than of *cerebral* disease.

To the distinguished author of the Dictionary of Practical Medicine—would that the ten years ago promise of a speedy completion of this great work were redeemed!—we owe the following case, in which the recovery from a well marked-apoplectic seizure took place without blood-letting:—

CASE.—*Apoplectic seizure in a stage coach; profound stupor and immobility; pulse slow and natural; cold affusion on the head, and stimulants to the nostrils; returning consciousness; use of purgatives and subsequently of bleeding; recovery.*

"Travelling in the summer, in one of the short stages, I sat opposite an aged and corpulent man, who suddenly lost his consciousness and power of motion. His countenance became first pale, then bloated and inexpressive, his breathing slow and slightly stertorous; all his muscles completely relaxed, and he fell, in a few seconds, upon those sitting around him. We were only a few doors from a chemist's shop; the coach was stopped, and he was carried thither. He was now profoundly apoplectic; a copious perspiration flowed from his face and forehead, the veins of which were distended, and all his senses were completely abolished. There was no sign of hemiplegia, but there was general and complete loss of motion and sensation. His neckcloth having been removed, the pulsation of the carotids was found to be slow, and of natural strength and fulness.

Whilst he was held in a sitting posture, in a chair, cold water was poured gently over his head from a sponge, and his head frequently sponged with it; volatile salts also were held for a short time, and at intervals, to his nostrils. The power of deglutition was at this time abolished, so that it was impossible to administer a draught, consisting of sp. ammon. arom. and camphor mixture, which was prescribed. In a very few minutes his consciousness returned, he took the draught, and, in a short time afterwards, he walked to a coach, in which I accompanied him home. He now complained only of very slight confusion of ideas, with scarcely any headache, but his carotids beat more firmly. One full blood-letting and an active purgative, were now directed. The next day he was perfectly well, and has continued so." 134.

Portal relates that Turgot had a frightful attack of apoplexy, at the moment of his experiencing pains in the feet announcing the approach of gout. He was of a strong constitution, very fat, with a red countenance, and was then about 50 years of age. He was bled in the foot; this diminished the severity of the apoplexy; sinapisms, a second bleeding in the foot, and some aperient medicine removed it.

Lieutaud relates the following case, which did well under similar mild treatment:—

CASE.—*Apoplectic attack after a meal; the mind had been much disquieted; returning consciousness; paralysis of the arm and face; leeches applied to the anus, blisters to the legs and arm, and purgatives administered; recovery.*

"M. l'Abbé de Boismont, about 66 years of age, extremely sensitive and passionate, for a long time complained of cramp in the muscles of the legs, especially of a night, and several times had felt a tingling in the fingers and toes. One day, after a meal, having been troubled with some mental affection, he was attacked with true apoplexy. I was summoned, but did not arrive until after the patient had recovered his recollection; he still had complete paralysis of the left upper extremity, and the mouth was drawn to the right side. Pulse full, countenance flushed. As he had formerly suffered from piles, I ordered leeches to the anus. This bleeding was repeated, and blisters were applied to the legs and one of the arms. Laxative draughts were administered. Afterwards the water of Balaruc, and other tonics. The patient improved, and from the great attention that was paid him, lived some time; he died with marasmus." 153.

The following two cases are adduced by Dr. Hull, in his work on blood to the head, to shew that apoplectiform symptoms may be induced, in certain states of the body, by excessive purgation:—

"S——, foreman of a mill; stout; ventri deditus: was under the care of a physician for disorder in the liver, which was treated with mercury. On the 8th of February, 1841, this had produced a hypercatharsis so prodigious, that his family surgeon found him nearly bereft of all power and all *pulse*. By judicious attention he rallied partially; and twelve hours after was visited by myself in consultation. I found him presenting all the cerebral symptoms of imminent apoplexy: lethargic, flushed. Yet the great debility and velocity of his pulse forbad an appeal to any other system than the nervous. Accordingly, mustard cataplasms were applied to his feet. But he went on into all the degrees of apoplexy, and died within twelve hours more."

"C——, a stout, unwieldly lady, near 70, fell into a coma whilst walking out

after dinner. Her surgeon administered an emetic, let blood twice and freely, and ordered a purgative. Mustard cataplasms. In a few hours consciousness was displayed; in a few days her intellect was restored. But her power of walking was not regained for months. I was called to this patient within two years, and found her apoplectic and moribund. In her usual health in the morning, she had taken a purgative, which had produced a hypercatharsis. After the evacuations she is struck with apoplexy. Emptied vessels, great debility; yet blood determined fatally to the head!" 165.

However injurious hypercatharsis may occasionally be, we should ever remember that no remedies are on the whole more useful in preventing a threatened invasion of apoplexy, or in recovering patients from the less formidable attacks of the disease, than active purgatives. The immediate use of strong sinapisms to the neck and of stimulating enemata should, perhaps, never be omitted in any case. We have already said that diligent inquiry should invariably be made whether the patient had been eating freely before the attack; for, whenever there is reason to believe that the stomach is loaded with food, an emetic should forthwith be administered. One or two of the cases, which have been related, afford striking proof of the efficacy of such treatment.

In taking leave of Mr. Copeman's work, we doubt not that our readers will agree with us, that there is a good deal of judicious and really useful instruction in its pages. We trust that he will be encouraged to prosecute his researches on the subject which he has chosen, and ere long give the public the benefit of his matured investigation.

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RECUEIL DE MEMOIRES DE MEDICINE, DE CHIRURGIE, ET DE PHARMACIE MILITAIRES, Vol. 57. Paris, 1844.

A Collection of Memoirs on Military Medicine, Surgery and Pharmacy.

THIS new volume of Memoirs, issued under the superintendence of the French Council of Health of the Army, contains several interesting papers, abstracts of some of which we proceed to lay before our readers:—

1. *Acute Dysentery with Detachment of the Mucous Membrane of the Large Intestine.*—Two cases are related by M. Catteloup, an attaché of one of the hospitals in Algeria. The *first* occurred in the person of a chasseur, aged 24, who had always enjoyed robust health, and was of sober habits. He was admitted into the hospital July 2, for a diarrhœa which had lasted several days, and was then accompanied with bloody stools. His affection, at first slight, soon became very grave, the bloody stools augmenting in number daily, and being accompanied with great pain and a quick full pulse. His treatment was antiphlogistic, and consisted in cupping the hypogastric region, bleeding from the arm and the application of leeches to the anus. Starch injections, cataplasms to the abdo-

men, and an abstinent diet were also employed, and three of the following pills, well known in French practice as Segond's pills, given at night. Ipecac. gr. j., Calomel gr. ¼. Opium gr. ⅛. However, the symptoms progressed from worse to worse, and he died on the 13th. At the autopsy the small intestine was found to be healthy, but the large offered every lesion seen in dysentery. From the cæcum to the rectum it was covered with sanious or puriform discharge, upon the removal of which, engorgement, ramollissement, ulcers of variable size, and even gangrenous eschars were found. On opening the sigmoid flexure a cylindrical membrane, 32 centimetres in length, was observed It so much resembled a portion of small intestine as at first to be mistaken for it. It was yet adherent at some points to the inner surface of the canal, and was believed to be a false membrane until its removal exhibited the muscular coat of the intestinal canal very distinctly. In the *second* case, the patient was a strong, healthy, but dissipated man, æt. 30, who, after suffering from intermittent diarrhœa for some weeks, was exposed to great changes of temperature and severe labour in a long march. The symptoms were soon converted into those of dysentery, and then became complicated with peritonitis. After death a perforation of the transverse colon and consequent abscess was found; the mucous membrane of the small intestines was quite healthy, but that of the large more or less diseased in its whole extent, presenting in different points ulcers and eschars. Near the perforation, a detachment of the mucous membrane, 35 centimetres in length, was observed, but which still retained some adhesions. An abscess was discovered in the substance of the anterior border of the liver.

The preparations in both these cases were submitted to a careful anatomical and microscopic examination by the professors of the Val-de-Grace, the result of which was, that no doubt whatever existed in their minds as to these being detached portions of the mucous membrane, The preparations are preserved, and are, the editor of the volume observes, of great importance, as being the only authentic examples of a detachment of a large portion of the mucous membrane from its mucous coat. In fact, the existence of such a lesion has been denied by most eminent pathologists, who have regarded such productions as always pseudo-membranous.

2. *Acute Pulmonary Abscess.*—Subsequent pathological research has confirmed Laennec's statements of the rarity of the termination of pneumonia in abscess. M. Laveran relates the particulars of three cases occurring in soldiers. He observes that, being well aware how frequently the abscess resulting from softened tubercle, and even pus in dilated bronchi, have been mistaken for acute abscess, he has conducted his investigations with proportionate care. So rare indeed are genuine examples of these cases, that M. Grisolle has only been enabled, in his important treatise on pneumonia, to collect 22 of these. The author believes that the opinions of Dupuytren upon the nature of the different forms of cellular tissue, and their corresponding lesions, may be adduced with advantage in explanation of the rarity of these cases. That observer admitted three forms, the serous, adipose, and fibrous, œdema and abscess being the lesion of the first-named, gangrene of the adipose, and abscess with strangulation of the last. Thus we see why, in erysipelas, abscess is so common

in the eyelids, and so rare in the external ear. Does not the fibrous nature of the pulmonary structure explain the rarity of abscess?

The three cases detailed were examples of pleuro-pneumonia, in two of which it occurred on the left, and in one on the right side, and as the two former were also complicated with pericarditis, they confirm, as far as they go the opinion long entertained at the Val de Grace, of the greater frequency of pericarditis in left than in right pleuro-pneumonia. The abscesses in these cases occupied the inferior lobes. The diagnosis of the abscess in each case was much obscured by the pleuritic effusion. In one case the gargouillement that was heard was naturally suspected to arise from a far more frequent cause, tubercular cavity. In the first case the expectoration was loaded with blood, as in one reported by Martin Solon. In the two other cases, with all the local signs of pleuro-pneumonia, there was the remittent fever so characteristic of suppuration. In reference to the effect of the pericarditis upon the pneumonia, M. Laveran observes:—

"In theorizing upon the subject, the doctrine of irritation furnishes the following explanation. Bearing in mind that when the irritation of the pulmonary substance is permanent, as in the case of tubercle and foreign bodies, abscess is the rule and not the exception, we inquire whether the co-existence of the pericarditis has not proved a permanent cause, which, inducing an inflammation in the parenchyma, has caused it to proceed on to suppuration, just as foreign bodies in the intestines provoke phlegmonous inflammations of the iliac fossa or abscess at the margin of the anus, and as renal calculi induce lumbar abscess."

3. *Cases of Irritation produced by Hairs acting as Foreign Bodies.*—M. Judas, after adverting to recorded cases of obstinate inflammation of the eye, resulting from the undue prolongation of the delicate hairs of the caruncula, or the inversion of those of the eyelid, refers to two cases in which malingerers employed hair as a means of exciting inflammatory action. In both cases long needles, followed by bundles of hair, were introduced beneath the skin at the side of the patella, the hairs being then cut off level with the skin. In both instances very violent inflammation of the knee joint resulted, followed by suppuration, and requiring the most active antiphlogistic measures. Two Italian practitioners have related each a case in which a pig's bristle became a source of great irritation. In one of these, a man, who had remained standing during a part of an evening, experienced a slight pain upon the instep. This increasing next day, he found the large extremity of a bristle projecting. It was drawn out in part that, and in part the next, day, its length measuring 120 millimetres. Suppuration succeeded, and kept the patient lame for some days. The other case was similar, except that the bristle withdrawn was shorter, resembling exactly those of the brush which was employed to clean the shoes. Its removal was not followed by inflammation. A discussion arose between the reporters of these cases as to whether these substances had introduced themselves from without inwards (for no suspicion was entertained of their having been purposely introduced,) or whether they had been accidentally swallowed with the food and eliminated by the skin!

M. Judas adds another case to these, which fell under his own obser-

vation. During a march from Metz to Paris, a captain of grenadiers complained to him of an intense pain at the sole of the foot, which compelled him to walk very lame. It was not until after a very attentive examination that a little thickening of the skin was seen at the point where the pain was complained of, on incising which the large extremity of a hair presented itself. This was soon removed, and all suffering ceased. It was about 25 millimetres in length, and exactly resembled the hairs of the leg. One of these doubtless had become detached, and slipping down to the sole, had been forced into a pore, dilated by the sweating of the foot :—

"It is however a practical conclusion I wish to draw from this case. If it had occurred to a common soldier, one whom I might have suspected of simulation, might I not, in the absence of all external signs, have given course to this suspicion, and unwillingly have abandoned the unfortunate being to this source of pain, which would have tormented him much more than the officer, by reason of the weight of his equipments. Might not this cause, apparently so slight, have even given rise to tetanus in a hot country like Algeria?"

*Practical Observations upon Affections of the Anus.*—We may extract a few of the observations furnished by M. Barthelemy, who has paid much attention to this class of cases :—

"*Fissure of the Anus.*—For some time past the therapeutics of this disease have singularly occupied the attention of surgeons. M. Trousseau declares it can be cured by injection of a strong decoction of *rhatany*, while others attribute a like efficacy to *ung. monesiæ*. Some surgeons apply caustic indiscriminately, others employ incisions. Like all other diseases, this presents differences as respects its cause and seat, and therefore it is plain that no one of these means will apply to all cases. Thus, in reference to causes, it is observable that syphilitic fissure, always infinitely less painful than ordinary fissure, disappears under the ordinary anti-venereal treatment, and by the use of opiated ointments during the acute stage, and of belladonnized mercurial ointment, or powdered calomel, when the inflammation is somewhat assuaged. In regard to the seat, it is well known that simple fissures, resulting from straining at stool, and situated in the middle of the rayed pleats of the anus, or a little higher up between the sphincters, have yielded to rhatany, monœsia, or nitrate of silver ointment, or, better still, to slight cauterization practised with this latter substance. But when the fissures are deep, and especially when they are situated very high between the sphincters, these secondary means generally fail, and it is only by complete and frequent cauterization, or better by incision, that the patient is relieved."

The author prefers in these cases incision, as less painful and more certain; but, where the patient will not consent to it, he applies the Vienna caustic freely to the fissured part, the nitrate of silver acting too superficially. When an operation is consented to, he makes an incision from 1½ to 2 lines in depth, along the whole length of the fissure, so as to convert it into a fresh wound, and declares that great success has attended this mode of procedure. He believes the spasm of the sphincters, which Boyer lays so much stress upon, is but consequent upon the irritation produced by the fissure, and that the division of the sphincter, whether by Boyer's method, or by the subcutaneous section as employed by Blandin, is unnecessary, and although great immediate relief results from it, relapse usually occurs. He objects, too, to M. Jobert's plan of excising

the fissured part, as inflicting unnecessary pain, and leading to troublesome anal contraction :—

"*Hæmorrhoidal Tumors.*—When these tumors have acquired a development, so that defæcation becomes very painful or even impossible, it is to surgery we must have recourse for the relief of the patient. Before doing this, relief, nay, even a cure, may sometimes be obtained by the employment of a well-combined plan of treatment, at the head of which may be placed bleeding from the arm, which will require repetition. I should like to add to this a little hydrotherapia, that is, I would advise cold water as the only drink, employing lavements and sitting-baths of the same. But when the tumours are old and pathologically organized, it is surgery which can alone avail. Until recently, it was by the ligature, when their base was pediculated, and by excision, when it was large, that these tumors have been attacked. Now, however, strange to say, these means are almost abandoned, and the boldest operators recoil before the fear of hæmorrhage, which may kill immediately, and phlebitis, which may bring on, a little later, an equally fatal result. Canterization is now the mode employed, some using concentrated acids, and others, the larger number, solidified Vienna caustic."

The author employs this latter substance formed into large sticks, in hæmorrhoids with a large base; but where he can find patients courageous enough, he much prefers the *actual cautery heated to whiteness*, which effects a more complete and rapid destruction of the tumour, and leaves a solid cicatrix which presents a relapse. He relates a case in which a cure followed this treatment, which was first suggested to him by a paper by M. Begin in the *Annales de la Chirurgie*.

5. *Synovial Ganglions.*—M. Barthelemy has also a communication upon his mode of operating upon these bodies, when their dispersion is not effected by other means :—

"Having raised a fold of skin at about an inch from the tumour, plunge into it the blade of a knife, strongly attached to a thin rounded handle, and considerably curved near its insertion. Pass this instrument, with its flat side downwards, to the cyst, which is to be divided in two, by passing through it horizontally from side to side, just as one cuts an almond. Draw out the knife by the same aperture it entered, following it in its retreat with the thumb of the left hand, which by proper pressure drives before it the contents of the cyst, at the same time that it opposes the admission of air; and then immediately establish compression by means of a plate of lead, which is to be continued for at least a fortnight."

This mode was proposed by M. B. in 1838, since when he and others have repeatedly performed the operation with success, when all other means have failed of giving relief.

In another part of this volume a case is related of a ganglion, occurring in the person of a young soldier. It was about the size of a pigeon's egg, and placed at the back of the left wrist-joint, just above the annular ligament. Breaking the walls of the cyst by forcible compression, evacuation of its contents with subsequent pressure, were tried in vain, and it was at length extirpated with little difficulty.

6. *On the Cure of Panaris by Mercurial Ointment.*—This is an account by M. Martin of a curious epidemic of whitlow, which affected many

soldiers of a French Infantry regiment, while stationed in the Basque Provinces on the Spanish Frontier in 1835. The whole number affected amounted to 101 in 16 months, and 10 cases are related as examples. The inhabitants of these regions are remarkably robust, possess great corporeal agility, breathe a pure air, and partake of abundant food, containing a too large proportion of spice. It results that they enjoy a great exemption from internal maladies, and when these do occur, they are soon cured. But, at the same time, they are very liable to peripheral affection, such as erysipelas, dartres, phlegmons, furuncles, anthrax, hæmorrhoids, &c. After the regiment had arrived in this locality, and the soldiers had enjoyed a mode of life so different to that they had led in barracks, their health became better than it had been for eight years before. But this improved regimen, although it seemed to secure them against severe ailments, and impart to them much additional bodily activity, as the warm weather approached rendered them liable to a great variety of cutaneous diseases, especially the inflammatory affection of the hands, termed panaris. The indulgence in spirituous liquors seemed to have had much to do with this; for the officers, who followed a temperate regimen, never were the subjects of the affection, and the soldiers, who did not indulge in excess, were also exempt, although exposed to the other causes, as immoderate use of spices, too violent exercise, and high temperature. The Spanish Basques, exposed to the same hygienic influences, but of much more sober habits than the French Basques, suffered much less frequently. External irritation, such as friction, contusions, &c., did not seem to have more than its ordinary influence in inducing this affection.

The disease was a serious one, being a most intense local phlegmasia, with corresponding constitutional derangement and local consequences. Suppuration was the mildest termination; for as the tendinous sheaths sometimes became implicated, caries of the phalanges and loss of a finger, was not an uncommon occurrence.

The treatment consisted in general and local bleeding, revulsives, narcotics, emollients, incisions, &c.; but, however carefully any of these means was employed, no arrest of the progress of the affection took place. The reporter having met in a journal with an account of the utility of the *mercurial ointment* in similar cases, gave it a trial with the happiest results; for, rebellious as the disease had before shown itself, it now became quite manageable. The part affected was rubbed with the ointment every alternate five minutes for two hours night and morning, a cataplasm being afterwards applied. Relief was so prompt and complete, that it was naturally believed the character of the disease had changed; but some cases happening to occur which were treated by the ordinary means displayed all the former virulence. Prior to the mercurial treatment resolution never occurred, and many most unfortunate terminations were observed; but, subsequently, the very reverse took place. After the troops left the locality and returned to their old quarters the disease never re-appeared.

7. *Cases of Scrofulous Caries.*—M. Chambolle, Surgeon to the Military Hospital of St. Denis, reports that scrofulous caries has shown itself with remarkable frequency in his wards. In one year 18 cases were admitted, of which 12 died, 5 were discharged unfit for service, and 1 only remained

convalescent. In nearly all the cases there had been exposure to cold and damp, and young soldiers were especially the victims of the disease. Its progress was sometimes very rapid, and at others very slow, the patients seeming to suffer little or nothing as regards pain, but becoming enfeebled by diarrhœa and fever. Treatment, whether active or temporizing, seemed of little avail, and whenever a patient presented himself with an abscess near a bone, some prolongation of his days was usually all that could be achieved. Antiphlogistics, iodine, tonics, caustics and the actual cautery were all tried in vain. Many patients suffered so little pain that they refused to submit to the severer caustics. Amputation and resection of the diseased bones were sometimes had recourse to with no better success than other measures. Several bones were frequently simultaneously affected, but the sternum, vertebræ, and ribs were those especially attacked.

8. *Fracture of the Leg, the patient walking and riding during twelve days after.*—An adjutant of dragoons, in jumping from a height, came flat upon his feet, and felt a severe pain in the middle of the leg, which obliged him to remain quiet for a few minutes. He soon, however, walked some miles, and for several days after continued to perform the duties of his post, which from the 9th to the 13th September, were of a peculiarly fatiguing character. During this period there were some pain and swelling, but on the last-named day, while descending a declivity, a bone was heard to snap, and he would have fallen to the ground but for the arm of a friend. Both bones were found fractured towards the lower part of the middle-third, the tibia being broken very obliquely. The case was then treated in the usual method, and the patient recovered the perfect use of the limb.

9. *Extirpation of the Eye in consequence of a gun-shot wound.*—A soldier was brought to the hospital 5th Dec. The ball had penetrated the right branch of the lower jaw and upper maxillary bones, and could nowhere be found. Notwithstanding prompt and judicious treatment, great cerebral disturbance came on, which soon became almost complete coma. From the first, the patient had always complained of intense pain in, and loss of the vision of, the left eye. This organ, at first slightly ecchymosed, eventually became highly inflamed, chemosed, swollen, and greatly projected from the socket. Its extirpation was effected with some difficulty, in consequence of the size of the organ, which was only sufficiently diminished by evacuating its fluid contents. At the bottom of the orbit the lost bullet was found and removed. The wound was brought together at its edges "without first filling it up with charpie, as most authors recommend, and so increase the violence of the inflammation." A wet compress was applied, and the patient, although the coma did not at once disappear, recovered perfectly.

10. *Preservation and Management of Leeches.*—The vast demand for leeches in France renders the sources of their supply a matter of national importance, and this memoir, prepared from numerous communications forwarded to the Council of Health, treats at great length of the best mode of forming ponds for them, and of preserving them in a healthy condition. Any of our leech-merchants who may feel disposed to try the

experiment of constructing ponds for the sojourn and multiplication of these useful animals, instead of importing them, will find this paper a very useful one. We can make room only for an extract or two:—

"*Re-application of Leeches.*—The most exact experiments have shown that leeches which have sucked, if properly disgorged, not only recover their vigour and agility, and are fit for renewed use, but that this re-application may be made without the slightest danger. Different modes of disgorging them have been employed. Praised for a time, they have been abandoned as offering none of the expected advantages. The use of salt, nitre, tobacco-water, weak vinegar, alum, &c. is hurtful rather than useful. Under the influence of these irritating substances the leeches becomes restless and their muscles contract; but afterwards they languish and mostly die. Ipecac. recommended by Mr. Dick, has proved of no avail in the hands of others; while charcoal is of no more use than simple water. Some persons practise a deep incision along the posterior part of the body. This is a difficult process and kills so many that it should be abandoned.

"The only modes of disgorgement which careful experiment sanctions are *prolonged repose* and *pressure*. For the first, the leeches should be several times washed in river or spring water of a temperature of 60° or 70°, and then placed in earthen jars, at the bottom of which some clay has been laid. Those which are sufficiently strong will penetrate into the clay where they will remain, and all those who die should be at once removed. The water of the jars requires renewal every forty-eight hours for a fortnight. The survivors should then be put into large tubs of water containing some clay and aquatic herbs, and which are to be freely exposed to the air. Where there are leech-ponds they may be placed in them, when they will immediately penetrate into the mud lining the bottom. In five or six months they are fit for use.

"If, however, the leeches are urgently required, we must disgorge them by pressure. Shortly after the first application they are to be placed in water at about 70° to relax their tissues somewhat. After drying, they must be taken one by one in the thumb and fingers of the left hand covered with a napkin, while the thumb and fingers of the right hand, slightly moistened, are applied to the body of the leech so as to compress it from behind forwards several times until the blood has been forced out. If the leech is pressed violently, the elasticity of the muscles is destroyed, and the animal loses the power of contracting and dies. Too much blood forced out at once would also rupture the orifice. As they are disgorged the leeches should be thrown into vessels containing water at 70° to favour the complete evacuation of the blood. In a quarter of an hour this may be replaced by water at 50°, which requires renewal from time to time. Leeches so treated may be applied immediately after disgorgement, but this mode, useful in case of urgency, cannot be repeated often without injuring them."

We have the following observations upon the *Diseases of the Leech*:—

"When in a state of liberty, the leech, in the enjoyment of the air, water, and light which it possesses in its natural pond, attached to the aquatic plants, or plunged in the slime, preserves all the characters of health in its form, colour, and vivacity. Any affection which would diminish its activity, or impede its power of penetrating into the mud, would soon deliver it into the hands of active enemies. When shut up in receptacles leeches are subject to several remarkable changes. If sometimes they preserve their health during several months, at others they become exhausted by an abundant exsudation, while the atmospheric vicissitudes to which they are subjected are found to be very hurtful to them. Sooner or later their form or colour change, they languish, and often succumb to various diseases in great numbers in a short time. It is difficult to obtain an exact account of these morbid effects. It has been said that the atmospheric

electricity produces an important influence upon the mucosities they secrete. A cause of death sometimes arises in the putrefaction amidst which they are left, or the vitiation of the air by the decomposition of animal matters, yet with every precaution the mortality is frequently very great.

"M. Brossat first accurately described the diseases, which are sometimes so promptly fatal to the leech. He observed that it was very difficult to preserve leeches collected before September, without seeing them attacked by three diseases, from which they are exempt only in winter. These he describes as— 1. *La metallique*, a denomination given the leech on account of the change of *facies* it undergoes. Nodosities, in the shape of chaplets, form in various parts of their bodies. This very fatal disease may attack them from March to the end of May. It lasts about eleven days, during which they should not be used. They are to be kept in porous vessels formed of charcoal and burnt clay, which are suspended in a current of air, so as to keep the temperature of the water lower than that of the atmosphere. A little milk should be added to the water. 2. *Mucus*, which renders the leeches elastic and mucilaginous. This disease kills them by hundreds, lasting three days, and appearing from June to the end of August. A tepid bath should be used daily, the leeches being kept in the intervals in a mixture of water and powdered charcoal, to which a little honey has been added. 3. *Jaundice*. In this, the most fatal of all diseases, the leeches become as yellow as saffron, and resemble the stigmata of that plant. If not promptly succoured all perish at once. A small quantity of yellow fluid must be discharged from the tail of the animal by means of a needle. It is then washed in tepid water, and placed in water in which a little caramel has been dissolved.

"To these affections mentioned by Brossat, may be added one not less dangerous reported by M. Claude, viz., an inflammation of the intestinal canal. The leech increases in size, is surrounded by unequal rings, and its lips are pursed and bloody. In the digestive tube is found a fluid matter mixed with corrugated blood: the muscles are soft and soon putrefy. This disease, M. C. considers contagious, and that it is produced by a decomposition of the mucosities secreted by the leech, when the changing of the water has been neglected. The leeches must be placed in large tubs with clay and aquatic herbs, or in pits dug for the purpose."

The volume terminates with an address delivered by M. Alquié, Chief Professor at the Val de Grace, upon the distribution of the prizes to the successful students. One or two passages from this we think are well worthy of being laid before our readers.

After observing upon the great advantages derivable from a modified reception of the *physiological doctrine*, almost repudiated by so many at the present day, he proceeds :—

"Do not let the energy of my language surprise you, gentlemen. You cannot measure as we can all the injustice, all the ingratitude of the present generation towards the genius of Broussais, in its complete forgetfulness of the benefits which he has multiplied in all branches of the practice of our art. You have not seen, as we have, these wards crowded with fever patients who were gorged with substantial *bouillons*, bark, and potions, to which they joined serpentary with musk, camphor, ether, and the whole tribe of incendiary stimuli. You have not seen inflamed wounds moistened with hot wine, and dressed with the most irritating ointments. You have not had to recoil with disgust at those large assemblages of venereal patients, saturated with mercury while gnawing chancres devoured their tissues, while large ulcers were surrounded by the worst forms of inflammation. This horrid ptyalism and hospital infection acquired a right of occupancy in our pox-wards, and the most lamentable circumstances were multi-

plying infinitely. Well, gentlemen, it is physiological medicine which has changed the face of all this, in teaching practitioners first to combat the inflammatory condition of the tissues, and thus remove from the disease one of its most important elements. At present the therapeutics of all these affections is much simplified. Physicians and patients benefit by this, without inquiring too minutely, or rather without inquiring at all, concerning the doctrines of the great master to whom they owe so much. It is just as in our social state we enjoy the immense prerogatives of a wide and wise liberty, without recollecting all the efforts and sacrifices it has cost our fathers to conquer it.

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"Do we then, gentlemen, in the prevalent doctrines of the day find principles better established? Do the few facts upon which each is based suffice to efface all our medical creeds? Is it *Chemistry* which is to furnish the light which is to guide us all? No one views with more interest than myself the labours undertaken and pursued in common by physicians and chemists; but it must be acknowledged that, putting aside the elucidation of three or four diseases (diabetes, chlorosis, albuminuria, and gravel,) these labours have not furnished medicine with anything but some additional sterile theories. Assuredly I do not forget the services which chemistry daily renders to the art of healing. She enlightens the physiology of the healthy man, and transporting her apparatus to the bedside of the patient, analyses the secretions and elucidates the nature of organic transformations. In teaching us the properties of bodies, and, by analogy, their influence upon the living economy, she spares us many trials and experiments which would not always be unattended with danger. She renders us eminent services in asphyxia, poisoning, and the correction of miasmata; and thanks to her light, therapeutics is no longer an imperfect arsenal whence the physician could only take treacherous arms, neither the power nor effects of which he could appreciate.

"But in acknowledging the immense importance of chemistry, and in expressing the belief that it is yet from her that the science of man in health and disease has most to expect, we must still guard against her rash encroachments. The lessons of the past ought not to be lost to us, and the remembrance of the mischief caused to medicine by the chemists, and iatro-chemists of all epochs, should render us very reserved when new pretentions are advanced. There would not be more wisdom in allowing ourselves to be now drawn into the exclusive consideration of the phenomena furnished by the organic fluids than there was, a while since, in attaching ourselves to an exclusive solidism. Do not let us forget that, in the vogue of some experiments, in the involuntarily exaggerated importance of some results, we must attribute a large part to that spirit of reaction which, in science as in politics, is one of the most deplorable tendencies of the human mind. Besides, gentlemen, make a conscientious inventory of all these wonders which they exalt with so great a noise of experiments and analyses and tell us if there is (as regards medicine) that which can constitute a doctrine in the place of that which has comprehended the labours of nearly an age, and which has only been produced by the combined and progressive efforts of Haller, Chaussier, Pinel, Bichat and Broussais.

"Does the *Numerical Method* satisfy us better? We cannot allow that it does. A simple process of verification *a posteriori*, never can be elevated to the dignity of a system, since it will be eternally true in medicine, that the problem is individual. Doubtless, calculation may teach us in a general manner, in what proportions different diseases show themselves in this or that country, among men or women, the young or aged; in what proportion they exist in individuals of certain professions; but it can never establish from these enregistered facts that a certain formula of treatment must be applied to a certain order of facts, because nothing is so variable as the facts in medicine, and nothing is more rare than their perfect identity. We acknowledge that figures are a necessary base

for the solution of a crowd of problems referring to the etiology and prophylaxis of morbid affections; and in an especial manner do statistics render ample services to military hygiene. They in some degree assist us in classing garrisons according to their degree of mortality, in ascertaining the prevalence of disease in different localities, the proportion of patients according to age, professions, duration of service, &c., &c. We conceive that, after the constant return of identical observations, during a great number of years, the chief administration must take measures for the modification for the better of the various unfavourable conditions. It is a most laudable undertaking thus to assemble all the necessary materials, providing these materials be collected with a conscientious intelligence. This is the hygiene of administration enlightened by medicine; it is the accomplishment of duties devolving upon governments, guardians interested in the public welfare. But to desire, by means of figures, to establish a method of treatment, to which all cases belonging to a category of given affections must be submitted!—to say, *e. g.* that after copious bleeding, employed in 100 patients attacked with pneumonia, there have resulted 90 cures and 10 deaths; while the same number of patients, otherwise treated, have furnished 20 deaths and 80 cures—to conclude from these facts that since the first method had been followed with more success than the second, that it is *the true method*, the only *one that must be employed*—that it is to be constituted as a rule—to be elevated to the power of a law—that is what we cannot admit, and what experience and reason daily reject.

"In fact, may it not, does it not, happen that a new series of a hundred patients, attacked with pneumonia, may be composed of cases like the 10 which the first method has not been able to cure, and like those which have been cured by the second? and how then, we may ask, is an inflexible formula to be applied? Now, gentlemen, what we have here supposed, last winter you saw occur in our wards. We had frequently to direct your attention to the point, that the pneumoniæ and pleuro-pneumoniæ of the month of December and first half of January, yielded like enchantment to a bold antiphlogistic treatment, while those of February and March resisted it, and exacted, with greater reserve in blood-letting, the intervention of a different order of means. And nevertheless the patients of February and March were affected with pneumoniæ like those of December and January: but these affections differed from each other in that something which constitutes their *proper nature*, and their hundred different shades and varieties. The same may be said of a crowd of other diseases. Thus, then, we admit figures as a means of study and verification, we reject them as a general system. The science of man is too multiple to bend itself to the rigour of their corollaries."

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ANATOMICAL AND PATHOLOGICAL OBSERVATIONS. By *John Goodsir*, F.R.S.E., Demonstrator of Anatomy in the University of Edinburgh, and *Harry D. S. Goodsir*, M.W.S., Conservator of the Museum of the Royal College of Surgeons, Edinburgh. 8vo., pp. 127. Macphail, Edinburgh, 1845.

WE are happy to receive any additions to minute anatomy from so careful and excellent an observer as Mr. J. Goodsir. The work before us contains brief, but in several respects important, notices on many of the intricate structures and processes of the animal body—on nutrition; on the

intestinal villi; on absorption and ulceration; on the structure of the human placenta; on the structure and economy of bone, &c.: the principal part of the matter of these papers has already appeared in other publications. Mr. H. Goodsir has also given some contributions derived from zoology, anatomy, and pathology, illustrative of nutrition and secretion.

The powers and properties of nucleated cells have been so often described, that it is only necessary to refer to some of the more important of Mr. Goodsir's remarks. The author fully adopts the views of Dr. M. Barry, who was the first to show the great importance of the nucleus as constituting the active centre from which all cell-formation, and thus indirectly *all* organic formation, proceeds.*

Mr. Goodsir calls these nuclei, together with their cells, "*centres of nutrition,*" because they constitute "the permanent source of successive broods of young cells, which from time to time fill the cavity of their parent, and carrying with them the cell-wall of the parent, pass off in certain directions, and under various forms. According to the texture or organ of which the parent forms a part." P. 2.

The author further proposes to employ the term "germinal membrane" in a more extended sense than it has hitherto been used, wishing to signify by it, in fact, the part of all secreting and absorbing surfaces, which, consisting itself of "cells with their cavities flattened," becomes the matrix of those cells which, existing on all free surfaces, constitute the more immediate agents of absorption and secretion. We think the extension here proposed a desirable one, as it tends to place the language of anatomy in harmony with the present views of physiology, according to which the process that gives rise to the embryonic tissues, is correctly regarded as nothing more than a particular instance of the general action of nutrition:—

An instance of such a "germinal membrane" is furnished by that thin delicate expansion, called by Bowman the basement membrane, which underlies the epithelium of all mucous surfaces and canals. The following remarks upon this so-called "structureless" membrane are interesting:—

"I have always considered the basement membrane, or elementary membrane of glands, as a form of the primary cells of glands, and the source of the secondary or secreting cells, and have therefore been in the habit of naming it primary, or germinal membrane. Mr. Bowman considers it to be simple, or homogeneous. This is true as far as it contains no blood-vessels, and as regards its external or attached layer; but, as in its original condition it consists of cells, and when perfect contains nuclei at equal or variable distances, I do not consider it as simply molecular. These nuclei, or germinal spots, may be certain of the epithelial cells, which become mother cells, between the two layers of the mem-

* Some writers, but of no great authority, have lately questioned the commonly received opinion, that the nucleus is the first-formed and essential part of the cell, contending that at first each cell is a punctiform vesicle, which grows into a simple cell, and then forms within itself some peculiar substance, either a secretion, or the rudiments of a new cell or nucleus. Whilst numerous facts, and the evidence of so many accurate observers, support the views of M. Barry, we have no inclination to abandon them.—*See the British and Foreign Med. Review. Mr. Paget's Report.*

brane; or cells belonging to the order of the nuclear fibres of Valentin and Henle." P. 3.

The paper on the structure and functions of the intestinal villi is one of much interest, and although the assertion of Mr. Goodsir, that the epithelium is detached at each digestion, has been called in question, we have no doubt of the general truth of his views, and therefore recommend the observations contained in this chapter to the careful notice of our readers.

It is well known that Mr. Cruikshank, in examining with Dr. W. Hunter the intestine of a woman who had died soon after eating a hearty supper, found what they conceived to be the open orifices of the lacteal absorbents. Mr. Goodsir has had an opportunity of inspecting two preparations of the intestine upon which these anatomists made their observations; and he is satisfied, that although the description and figures of lacteals radiating within the villi are quite correct, yet that Cruikshank was led into an error, when he represented those vessels as opening on the free surface of the intestine.

It has been the general opinion of physiologists that absorption and secretion depend on forces of different and opposite tendencies—the one attractive, the other repulsive. Mr. Goodsir contends, on the contrary, that "they are both attractive, absorption being but the first stage in the process of secretion. Secretion in fact, differs from absorption, not physiologically, but morphologically."

The views of the author upon the agency of the epithelium of the intestine are so well known, that we need here only state that he conceives the cells contained within the villi perform the office of absorbing the chyle, whilst the prismatic epithelium covering the exterior of the villi and the Lieberkühnian follicles becoming detached, cast their contents into the intestine and so effect secretion. A corroborative fact is mentioned to the effect that when the villi turgid with chyle, have been kept for some time in spirits, the contents of the vesicles become opaque from the coagulation of the albumen they have taken up. It is also stated, which we have ourselves often observed, that on examining an animal just killed, a commencing separation between the nutritious and excrementitious matters is observed in the intestine, a milky substance, consisting, according to the author, of a transparent fluid, with a few oil globules, adhering to the mucous surface, whilst a brownish fluid occupies the cavity of the bowel.

The author's account of the process of ulceration in cartilage, of the separation of dead from living bone, of the detachment of a slough in the soft parts, for these are all effected in the same way, are deserving of attention. In all these actions, the vessels play a subordinate part. The process is thus described:—

"A rapidly-extending ulcerated surface appears as if the textures were scooped out by a sharp instrument. The textures are separated from the external medium by a thin film. This film is cellular in its constitution, and so far it is analogous to the epidermis or epithelium. It is a peculiarly endowed cellular layer, which takes up progressively the place of the subjacent textures, these being prepared for dissolution, either by the state of the system, the condition of the part, or by some influence induced by the contiguity of the new formation." P. 15.

The fifth chapter contains some valuable facts connected with secreting structures; and it is due to Mr. Goodsir to state, that several of the observations now presented in a connected form were published as early as 1842. The principal object is to show, by a series of well-selected observations, that all true secretions, bile, urine, milk, semen, &c., are formed by a vital action of the nucleated cell, and that they are first contained in the cavity of that cell; and further, that growth and secretion are identical—the same vital process under different circumstances. The concurrent testimony of physiologists in all parts of Europe, have firmly established the truth of these two positions, which may now be regarded as fixed principles of the science of organization.

In the paper before us it is asserted that the metamorphoses taking place in the cell, and which constitute the act of secretion, are effected by the nucleus, not by the cell-wall; and, in support of this, an interesting fact is mentioned that the former is, in every instance directed towards the source of nutritive matter, whilst the latter or cell-wall is opposed to the cavity into which the secretion is cast. It is known that in certain glands the secreting cells are thrown into the excretory passage entire instead of being ruptured; such cells, it is affirmed, after thus ceasing to form a part of the organism, still retain so much individuality of life, as to proceed with their metamorphosing action. The following interesting illustration of these independent powers of cell-life is given by Mr. H. Goodsir: it is found that the component cells of the semen not only undergo a development as they descend in the semenal duct of the decapod crustaceans, but actually experience their ultimate change by which the spermatozoa are produced, after they have been deposited in the spermatheca of the female.

In speaking of the synovial membranes Mr. Goodsir states his belief that their highly vascular fringes, considered by Clopton Havers to be glands for the secretion of the lubricating fluid of the joint, do really perform that office; and we may remark that, an examination of some very successful injections, induce us to agree in the correctness of this opinion.

The results of the author's researches on that difficult branch of minute anatomy, the texture of the lymphatic glands are thus given:—

"1. That the lymphatic glands are merely networks of lymphatic vessels, deprived of all their tunics but the internal, the epithelium of which is highly developed for the performance of particular functions.

"2. That these peculiar lymphatics are supplied with a fine capillary net-work, to supply matter for the continual renovation of the epithelium." P. 49.

Of these papers we consider the most important to be that on the structure of the human placenta, the whole of which is worthy of a careful perusal. It is difficult, without exceeding the limits of our present notice, to point out the various membranes and other parts connected with the placenta, and especially to describe the principles of their formation and relations, derived from an extended study of ovology, by which alone clear notions of the complex structures, as they exist in the human female, can be obtained.

Mr. Goodsir's observations refer more especially to the true relations and minute texture of the mucous coat of the uterus after conception—to

the formation of the decidua—to the texture of the tuft and villi of the placenta—and to the disposition of the fœtal and maternal vessels; in short, to all those points concerning which there has been in late years so much of research and controversy. In considering these intricate questions, we shall take the liberty of reversing the order observed by the author, conceiving that just views are more likely to be conveyed by inquiring first into the several individual parts composing the placenta, and then by investigating that organ in its complete and formed condition.

The outer membrane of the ovum, or the chorion, is, it is well known, the part by which the relations, whatever they may be, existing between the fœtal and maternal systems, are established. This membrane, it must be remembered, is like its analogue in the bird's egg, the membrana testæ, in itself entirely destitute of blood-vessels. It presents a vast multitude of projections, called tufts and villi, each of which, according to Mr. Goodsir, consists of a very delicate and transparent, but at the same time firm membrane, (called by the author the internal membrane of the placental villus.) Beneath this membrane are a number of nucleated cells, (the internal cells of the villus,) egg-shaped, difficult to define on account of their transpareney, but having nuclei easily recognisable. In the progress of development the ramifications of the umbilical blood-vessels, sustained upon the mucous sack of the allantois, are by that pouch carried up to the chorion, into the tufts and villi of which the ultimate branches penetrate, so as to be received like the fingers placed in a glove.*. The umbilical capillary vessels, the minute disposition of which has been so admirably described by Professor Weber and Mr. Dalrymple, are thus brought into contact with the nucleated cells just described, and which, according to Mr. Goodsir, play an important part in the nutrition of the embryo.

We now have to consider the much more obscure parts belonging to the maternal system, and firstly, of the decidua. The researches of Professors Weber and Sharpey show that, after impregnation has taken place, the mucous coat of the uterus swells and becomes lax, and more especially that its glands or follicles experience an important change, enlarge, and pour out a semi-fluid, granular secretion. Mr. Goodsir particularly describes, what the above physiologists have not noticed, that part, namely, of the mucous coat of the uterus, which is placed between the follicles: this, in a recently-impregnated specimen, was highly vascular, and the areolæ of the vessels were occupied by a texture consisting entirely of nucleated cells, which by Bär and Wagner were supposed to be uterine papillæ; beneath these cells the uterine surface was covered by a membrane which seemed to be continuous with the basement or germinal membrane of the follicles. The structures now described, the enlarged follicles and interfollicular vascular surface, constitute the *decidua vera*, which is thus a highly-organized glandular and vascular structure.

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* It would tend to prevent misconception if the terms used by many embryologists were employed; according to which the outer, non-vascular chorion is called *exo-chorion*, and the vascular layer, consisting of the umbilical vessels the *endo-chorion*.

According to the author, "about the time when the ovum reaches the uterus, the developed mucous membrane or decidua begins to secrete; the os uteri becomes plugged up by this secretion, where it assumes the form of elongated epithelial cells; the cavity of the uterus is filled with a fluid secretion, the 'hydroperione' of Breschet, and, in the immediate neighbourhood of the ovum, the secretion consists of cells of a spherical form." (P. 58.) It is these cells which, enveloping the ovum, constitute the *decidua reflexa*. "From what has now been stated, it appears, that the decidua consists of two distinct elements: the mucous membrane of the uterus thickened by a peculiar development, and of non-vascular cellular substance, the product of the uterine follicles." (P. 58.)

The ovum approaches the thickened uterine mucous membrane, or that portion usually described as the decidua scrotina; and at this time, when the allantois is conveying the umbilical vessels to the tufts of the chorion, "the vessels of the decidua (which is shown above are the uterine) enlarge, and assume the appearance of sinuses encroaching on the space formerly occupied by the cellular (reflected) decidua, in the midst of which the villi of the chorion are embedded. This increase in the calibre of the decidual capillaries, goes on to such an extent, that finally the villi are completely bound up or covered by the membrane which constitutes the walls of the vessels, this membrane following the contour of all the villi, and even passing to a certain extent over the branches and stems of the tufts. Between this membrane, or wall of the enlarged decidual vessels, and the internal membrane of the villi, there still remains a layer of the cells of the decidua."

Having described the integral parts forming the placenta, it may be stated that, when that organ is examined in the uninjected state, proceeding from its exterior, the following parts are met with:—

1. The external membrane of the tufts and villi, a portion of the wall of the vascular system of the uterus, continuous, prior to the detachment, with the rest of that wall.
2. The external cells of the villi, belonging to the decidua.
3. The internal membrane of the villi, consisting of the non-vascular chorion (exo-chorion.)
4. The internal cells of the villi, which are cells of the chorion.
5. The umbilical blood-vessels.

It thus appears that the placenta, as Hunter and most anatomists have contended, consists of a fœtal and of a maternal portion intermixed, but essentially distinct from and independent of each other; one part being formed by the membranes and blood-vessels of the fœtus, and the other, of the mucous coat, follicles, and blood-vessels of the uterus. It would be incompatible with our limits to enter further into the details of the relations between the villi of the chorion with the great uterine vessels: for such details we refer our readers to the work before us, and also to the valuable observations of Professors Weber, Sharpey, and Reid, and of Mr. Dalrymple.

Our present notice would, however, be incomplete if the physiological inferences of Mr. Goodsir were not briefly mentioned. The great object of this gentleman is to show, what we have ourselves long held with reference to the umbilical vesicle, that the placenta accomplishes the nutrition of the

fœtus, independently of its respiratory office, upon exactly the same principles as those effecting the ordinary process of chylous absorption. The author concludes that the external cells of the placental villi separate from the blood of the mother, the matter destined for the blood of the fœtus, being thus at once absorbing and secreting cells and performing, during intra-uterine existence, a function for which is substituted in extra-uterine life the digestive action of the gastro-intestinal mucous membrane: that the internal cells of the placental villi absorb, through the non-vascular chorion, the matter secreted as above, performing a function for which is substituted in extra-uterine life the action of the absorbing chyle cells of the intestinal villi. This account shows, what is proved in various other ways, that there is no passage of blood from the mother to the child; it is merely nutritive matter which is deposited from the uterine vessels and which, after the elaboration just described, is taken up by the capillaries of the umbilical blood-vessels.

There is one error into which the author has fallen which it is desirable to correct, as it would otherwise introduce confusion where in reality none ought to exist. Mr. Goodsir says, "I am inclined to look upon the cellular (reflected) decidua, as representing in the gestation of the mammal the albumen of the egg of the oviparous animal. They are both supplied by a certain portion of the oviduct, and they are both brought into play after the nourishment supplied by the ovary is exhausted, or in the course of being exhausted." (P. 59.) All the evidences of comparative ovology are opposed to this opinion. In the first place, the ovum of the mammal is provided, like that of the bird, with albumen placed without the yelk: in the second place, the albumen of the fowl is secreted at the upper division of the oviduct, above the isthmus that is to say, whilst the decidua is formed in the uterus, to which the part of the oviduct secreting the shell corresponds in the bird; and, lastly, there is abundant proof to show that, in all the earlier stages of development, and especially as regards the nourishment of the embryo by the contents of the umbilical vesicle (into which in all animals the white passes to mix with the yelk) and its vessels, the omphalo-mesenteric, there is a perfect identity between the mammal and the bird.

The papers contributed by Mr. Harry D. S. Goodsir are of interest, especially that "On the Anatomy and Development of the Cystic Entozoa." From the account given of the reproductive process in the *Acephalocyst*, it appears to arise, like all other organic beings, from a cell or vesicle, which is attached to the middle of the three membranes composing the parent hydatid, and which is therefore called "the germinal membrane." Shortly before the young hydatid separates from the parent, smaller cells are seen within it, and in this manner the successive and multitudinous progeny is generated, and these escaping by the rupture of the original cell, each attain a proper habitat, and then, but not till then, begins to throw off its young from the germinal membrane.

We regret that our remarks have already extended so far, that we cannot notice the other papers contained in this valuable work, which must be regarded as a most acceptable addition to all who are engaged in minute anatomy and physiology.

I. SIXTH ANNUAL REPORT OF THE REGISTRAR-GENERAL OF BIRTHS, DEATHS, AND MARRIAGES IN ENGLAND. Folio, pp. 358. London, 1844.

II. REPORT ON THE SANATORY CONDITION OF NOTTINGHAM, COVENTRY, LEICESTER, DERBY, NORWICH AND PORTSMOUTH. By *James Ranald Martin*, Esq. Folio, pp. 58. London, 1844. (Health of Towns' Commission.)

IN the number of this Journal for last July, our readers will find an abstract of the fifth Statistical Report drawn up by the Registrar-General. Although the present one does not contain so much medical information as most of its predecessors—the contributions of Mr. Farr being interesting rather to the actuary than to the physician—we trust that the data we shall adduce will be found useful to the profession generally, as bearing upon the important subject of Vital Statistics.

The number of Marriages, Births, and Deaths, registered in 1842, and in the three preceding years, were—

| | 1839 | 1840 | 1841 | 1842 |
|---|---|---|---|---|
| Marriages . . . . . | 123,166 | 122,665 | 122,498 | 118,825 |
| Births . . . . . | 492,574 | 502,303 | 512,158 | 517,739 |
| Deaths . . . . . | 338,979 | 359,634 | 343,847 | 349,519 |
| Excess of Births over Deaths | 153,595 | 142,669 | 168,311 | 168,220 |

On the 1st of July 1841, the population of England was estimated to be 15,927,867—7,783,781 males, and 8,144,086 females. "The mean annual rate of increase in the 10 years (1831-1841) was 1·334 per cent.; and as all the births are not registered, and no correct account is kept of the numbers who come into or go out of the country from year to year, we have no other means of estimating the population living in each year, than to assume that the numbers increase at a uniform rate in geometrical progression. The estimate is of course not exactly correct; but the approximation to the true numbers is the nearest that can be made, and the addition or substraction of a few thousands will not materially affect the quotients of the rate of marriage, birth, or mortality, where the divisor is nearly 16,000,000."

From the following extract, it will be observed that the proportion of the Marriages, Births, and Deaths to the entire population, varied somewhat during these different years:—

"To a mean population of 100, the average proportion of marriages was ·770, of births 3·200, and of deaths 2·209: or 1 person in 130 was married, 1 in 45 died, and 1 child was born to 31 persons living. These are the mean proportions of 4 years for marriages and births, of 5 years for deaths. The marriages decreased from 1 in 126 to 1 in 136. The births slightly increased up to the year 1841. The mortality was highest (2·290) in 1840, lowest (2·160) in 1841;

but neither the rate of birth nor death differed sensibly in the two years 1841 and 1842."

It should always be remembered that the rate of mortality is sensibly higher in the male than it is in the female sex: in the former it is as 1 to 44, and in the latter as 1 to 47—or, more accurately, about 2.294 and 2.124 per cent.

The marriages, registered in England in 1842, were 3671 fewer than in 1841, and 4341 fewer than in 1839. The Registrar-General attributes the decrease of marriages in 1842, in part at least, to the depressed state of trade in that year. "As compared with 1841, the number of marriages 'not according to the rites of the Established Church,' increased 653, showing that more dissenters have availed themselves of the rights conceded to them by the Marriage Act of 1836. The marriages among Jews were 163: the marriages (113) of Jews the preceding year had been considerably below the average of 144 annually—a number of marriages which implies the existence of 18,700 Jews in England." Upon an average of the four years 1839—42, there has been one marriage annually to every 130 persons living—64 males and 66 females.

The following table exhibits the proportion of marriages to the population, in some of the great European States, as well as in England:—

| | Years. | Population. | Marriages. | | | |
|---|---|---|---|---|---|---|
| | | Numbers | 1839 | 1840 | 1841 | 1842 |
| England* .. .. | 1841 | 15,927,867 | 123,166 | 122,665 | 122,496 | 118,825 |
| France . .. .. | 1841 | 34,213,920 | 266,890 | 281,998 | 283,902 | 280,412 |
| Austria (the German and Italian Provinces)† | 1840 | 21,571,594 | 168,872 | 169,322 | 184,122 | 176,999 |
| Prussia . .. .. | 1840 | 14,928,501 | 128,676 | 132,281 | 138,168 | .. |
| Russia (part of).. | 1842 | 49,525,420 | .. | .. | .. | 501,850 |
| | | 136,167,302 | | | | |

* Exclusive of Scotland and Ireland.

† The marriages in Hungary, Transylvania, and the Military Frontier, were estimated at 115,767 in 1839, which would make the marriages in the Austrian empire 234,639; the population in 1840 was about 36,950,401.

It would seem from this table (if we may depend upon its accuracy) that the relative proportion of marriages had been on the whole decreasing in England, and increasing in the continental states, from the year 1839 and 1842.

The subject of Marriage naturally leads us to that of

"*Births.*—2,024,774 births and 1,391,979 deaths were registered in 1839—42; so that the excess of births registered in four years amounted to 632,795. The mean annual number of births was 506,194, of deaths 347,995; and the annual addition to the population registered was on an average 158,199. The number of

births registered in 1842 was 517,739, of deaths 349,519; and the excess of births over deaths was 168,220. At the rate of increase which prevailed in 1831 and 1841, the population would be 16,033,752 on 1st January, 1842, and 16,247,641 on 1st January, 1843; the increase would consequently be 213,889 in the year 1842."

The births registered in England are (it has been calculated,) in proportion to the population, one-seventh part more numerous than in France, and one-seventh part less so than in Prussia. It is to be borne in mind that the registration of births was, a few years ago, and indeed still is, much less complete in this country than in most continental states; where indeed it is made compulsory by law.

According to the most accurate calculations, the average number of children to each married couple in England is very nearly *five*. Of this number about *three* survive to the age of marriage, to replace the two parents and those who have no offspring; the surplus either swelling the number of the general population, or emigrating to foreign lands.

*Number of Illegitimate Children.*—The first attempt to determine this statistical point in England was made by Mr. Rickman, at the Census of 1831. The total number then returned was 20,000; of whom 10,147 were males, and 9,892 females. But this estimate is certainly very much below the mark. "The number," says the Registrar-General, "of illegitimate children registered in 1842 amounted to 34,796; which is 14,757 —or 74 per cent.—more than the numbers in Mr. Rickman's Returns of 1830. The population increased only 17 per cent. in the 12 years. I am disposed to consider Mr. Rickman's Returns as deficient to a much greater extent than they were supposed to be at the period of their publication; but with a correction for the increase of population, the numbers in the Abstract for 1842 would only have exceeded those in Mr. Rickman's Returns for 1830 by 11,300 instead of 14,757. This difference may, perhaps, among other causes, be ascribed to an actual increase in the proportion of illegitimate children during the operation of that important change in the Poor Law, which threw the charge of maintaining their illegitimate offspring upon the mothers. To whatever cause the increase may be ascribed, the relative numbers of legitimate and illegitimate births and baptisms returned in 1830 and 1842, show in the latter year a relative as well as an absolute excess of illegitimate children."

*Relative Number of Male and Female Births.*—The number of boys born is, in all countries, greater than the number of girls. It has, moreover, been generally observed that the excess of males is rather greater among illegitimate than among legitimate children.

The annexed table shows the proportion of legitimate and illegitimate children born in several of the states of Europe, according to the latest returns which the Registrar-General has received. He very properly cautions the reader against hastily drawing from these numerical data any conclusions as to the comparative mortality, or otherwise, of the different countries. A passing allusion is made to "the peculiarity in the manners of the people, to which the paucity of children born out of wedlock in Italy may perhaps be ascribed."

| STATES. | BIRTHS. | | |
|---|---|---|---|
| | Total. | Legitimate. | Illegitimate |
| Sardinia - - | 1,457,493 | 1,427,019 | 30,474 |
| Sweden - - | 476,799 | 445,510 | 31,289 |
| Norway - - | 181,363 | 169,252 | 12,111 |
| England - - | 517,739 | 482,943 | 34,796 |
| Belgium - - | 138,135 | 128,781 | 9,354 |
| France - - | 982,896 | 912,968 | 69,928 |
| Prussia - - | 591,505 | 549,376 | 42,129 |
| Denmark - - | 64,376 | 58,356 | 6,020 |
| Hanover - - | 55,559 | 50,072 | 5,487 |
| Austria - - | 894,711 | 792,890 | 101,821 |
| Wurtemburg - - | 75,456 | 66,597 | 8,859 |
| Saxony - - | 70,094 | 59,582 | 10,512 |
| Bavaria - - | 149,185 | 118,456 | 30,729 |

The mortality among illegitimate children is, in many countries, 60 or 70 per cent. higher than among those born in wedlock.* The excess is due, in part at least, to the existence of Foundling hospitals—which serve to attract, receive, and (as statistical facts demonstrate) *destroy* the hapless young creatures admitted to them.

"If the mortality were not greater among them than among legitimate children, every fifteenth person in England must be of illegitimate extraction. But the mortality is, as in other countries, no doubt greatly above the average; for without any crime whatever of his own, the illegitimate child is always exposed to dangers, hardships, and ignominy from his infancy; the law pronounces him *filius nullius*; he, however, escapes in England the tender mercies of the Foreign Foundling Hospital, and in our great towns and colonies has probably a better chance of attaining the station to which his personal conduct may entitle him than in any other country in Europe."

The Registrar-General quotes the following judicious observations from the *Handbuch der Populationistik* of Bernoulli, one of the ablest statistical writers of the present day. "The proportion of illegitimate children cannot serve as a standard of morality; nevertheless a remarkable frequency of such children is without doubt in many respects a great evil. The invariable fact that the mortality among the illegitimate is far greater than among the legitimate, and that many more of them are still-born, shows clearly enough how much more unfavorable their position is from the first. Who can doubt that their bringing up is much harder and more difficult? that the existence of a class of men, bound to society by few or no family ties, is not a matter of indifference to the State? The great majority of foundlings are illegitimate, which of itself shows how little, as a general rule, the mothers can or will care for these children. It is beyond doubt that fewer illegitimate children grow up to

* A larger proportion of the former are also still-born.

maturity; that they get through the world with more trouble; that more of them are poor; and that, therefore, more of them become criminals. Illegitimacy is in itself an evil to a man; and the State should seek to diminish the number of these births, and carefully inquire to what circumstances any increase is to be ascribed."

*Deaths.*—The average annual mortality of the population of England in the five years, 1838-42, was 2·209 per cent. or nearly *one* in every 45 individuals: in 1842, it was nearly *one* in 46. On comparing the rate of mortality in England with the mortality of France, Prussia, Austria, and Russia, it appears to be lower in this country than in either of the four States; but it must be remembered that Scotland and Ireland are not included, no steps having hitherto been taken for registering and abstracting the Births and Deaths in those parts of the United Kingdom.

*Deaths Registered in the whole, or in parts of five States of Europe.*

| | 1838 | 1839 | 1840 | 184 | 1842 | |
|---|---|---|---|---|---|---|
| England - - - - | 342,547 | 338,979 | 359,634 | 343,847 | 349,519 | Still-born not Registered. |
| France - - - - | 846,199 | 780,600 | 816,486 | 804,762 | 836,152 | |
| Austria (except Hungary, &c. | .. | 639,737 | 649,410 | 633,600 | 682,208 | Still-born Subtracted. |
| Prussia - - - - | 371,990* | 408,411 | 396,494 | 392,502 | .. | Ditto. |
| Russia (part of) - | .. | .. | .. | .. | 1,856,183 | |

* Nearly.

| | Year. | Population. | Annual Deaths. | | Annual Mortality. | |
|---|---|---|---|---|---|---|
| | | | Years. | Numbers. | Per Cent. | Living to 1 Death. |
| England - - - - | 1841 | 15,927,867 | 1838-42 | 346,205 | 2·207 | 45 |
| France - - - - | 1841 | 34,213,929 | 1838-42 | 816,840 | 2·397 | 42 |
| Prussia - - - - | 1840 | 14,928,501 | 1838-41 | 392,349 | 2 658 | 38 |
| Austria - - - - | 1840 | 21,571,594 | 1839-42 | 651,239 | 2·295 | 33 |
| Russia - - - - | 1842 | 49,525,420 | 1842 | 1,856,183 | 3·590* | 28 |

* Corrected for still-born *supposed* to be included in the 1,856,183 deaths; the still-born have been subtracted from the deaths in Austria and Prussia; they are probably not included in the deaths of France, and are not registered in England.

From the introductory report of the Registrar-General, we pass on to the letter of Mr. Farr on the state of the public Health in 1842, &c., &c. The mortality in that year was nearly the same as in the preceding one. The

mortality by diseases of the Zymotic* class—in which are comprehended all epidemic, endemic, and contagious diseases—was 4062 in 1842, and 4049 in 1841, to a million living. In 1840 it was 4947.

"The mortality in 1842 was nearly the same as in the previous year. The mortality by diseases of the Zymotic class was 4062 in 1842, and 4049 in 1841 to a million living. In 1840 it was 4947.

"*Small pox* and *Scarlatina* present the greatest variations in the five years over which the Abstracts extend: for 16,268 persons died of small-pox in 1838, and 2715 in 1842. The epidemic of scarlatina attained its maximum in 1840, and afterwards declined.

| Total Deaths registered in | 1838 | 1839 | 1840 | 1841 | 1842 |
|---|---|---|---|---|---|
| From Small-pox . . . | 16,268 | 9,131 | 10,434 | 6,368 | 2,715 |
| From Scarlatina . . . | 5,802 | 10,325 | 19,816 | 14,161 | 12,807 |
| | Deaths to 1,000,000 living. | | | | |
| From Small-pox . . . | 1,101 | 604 | 679 | 408 | 172 |
| From Scarlatina . . . | 393 | 683 | 1,289 | 908 | 809 |

"The reduction in the mortality from small-pox since 1840 was probably the result, at least in part, of the Vaccination Act; which has not, however, yet effected all the good that may be anticipated, as an epidemic has since 1842 broken out in the metropolis, and proved fatal to great numbers. The deaths in France from small-pox were 3317 in 1842, or not more than 91 to a population of 1,000,000. The deaths in Austria from small-pox were 4619 in 1840, 5189 in 1841, and 4411 in 1842, out of a population of 21,571,594; while the deaths in England, where vaccination was discovered by Jenner, were 10,434 from small-pox in 1840, and 16,268 in 1838, out of a population under 16 millions! *Diarrhœa*, *Dysentery*, and *Cholera* were fatal to 7622 persons, which is considerably above the average, and the excess may be ascribed, perhaps, to the higher temperature of the year. *Influenza*, on the contrary, and probably for the same reason, was less prevalent than in the previous year; 1659 deaths were referred to that head in 1841, and 883 in 1842. *Fifteen* deaths from *Hydrophobia* occurred in 1842, while 7 only were registered in 1841; but 24 persons died of hydrophobia in 1838."

The following tables will enable the reader to determine at a glance the actual and relative amounts of mortality from different diseases, in five consecutive years:—

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* This appellation is nearly equivalent to the English words *fermented* or *fermentable*, and indicates at once the pathological view taken of their nature. It is derived from ζυμοω, I *ferment*:—this, as well as ζυμωσις, *fermentation*, occur in the writings of Hippocrates. For further particulars on this subject, and on the ingenious speculations of Mr. Farr on the nosological classification of diseases, see the Medico-Chirurgical Review for October, 1843.

| CAUSES OF DEATH. | DEATHS. | | | | | Annual Number of Deaths to 1,000,000 living. | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1838 | 18 | 1840 | 1841 | 1842 | 1838 | 1839 | 1840 | 1841 | 1 42 |
| All Causes . . . . . | 342,529 | 338,979 | 359,561 | 343,847 | 349,519 | 22,380 | 21,856 | 22,878 | 21,589 | 21,654 |
| Specified Causes . . . . . | 330,559 | 330,497 | 351,757 | 336,664 | 342,774 | . . | . . | . . | . . | . . |
| I. Zymotic Diseases . . . . . | 67,877 | 65,343 | 76,064 | 63,148 | 64,295 | 4,596 | 4,321 | 4,947 | 4,049 | 4,062 |
| Sporadic Diseases:— | | | | | | | | | | |
| II. Of Uncertain or Variable Seat . | 44,232 | 46,362 | 48,396 | 48,053 | 49,216 | 2,995 | 3,066 | 3,148 | 3,082 | 3,109 |
| III. Of the Nervous System . . . | 49,704 | 49,215 | 50,768 | 49,593 | 50,625 | 3,365 | 3,255 | 3,302 | 3,180 | 3,198 |
| IV. Of the Respiratory Organs . . | 90,823 | 90,565 | 92,907 | 92,183 | 92,994 | 6,149 | 5,989 | 6,043 | 5,911 | 5,875 |
| V. Of the Organs of Circulation . | 3,562 | 3,788 | 4,870 | 4,546 | 4,925 | 241 | 250 | 284 | 292 | 311 |
| VI. Of the Digestive Organs . . . | 19,306 | 20,767 | 22,525 | 22,398 | 23,587 | 1,307 | 1,373 | 1,465 | 1,436 | 1,490 |
| VII. Of the Urinary Organs . . . . | 1,651 | 1,594 | 1,697 | 1,650 | 1,866 | 112 | 101 | 110 | 106 | 118 |
| VIII. Of the Organs of Generation . . | 3,263 | 3,412 | 3,623 | 3,555 | 3,340 | 221 | 226 | 236 | 228 | 211 |
| IX. Of the Organs of Locomotion . | 2,102 | 2,020 | 2,167 | 2,289 | 2,272 | 142 | 134 | 141 | 147 | 144 |
| X. Of the Integumentary System . | 420 | 448 | 525 | 528 | 497 | 28 | 30 | 34 | 34 | 31 |
| XI. Old Age . . . . . | 35,564 | 35,063 | 36,793 | 37,253 | 37,819 | 2,408 | 2,319 | 2,393 | 2,389 | 2,389 |
| XII. External Causes;—Poisoning, Asphyxia, Injuries . . . | 12,055 | 11,980 | 11,922 | 11,468 | 11,388 | 816 | 792 | 775 | 735 | 716 |

In the first, or Zymotic class, are comprehended Small-pox, Measles, Scarlatina, Hooping-cough, Croup, Thrush, Diarrhœa, Dysentery, Cholera, Influenza, Ague, Remittent Fever, Typhus, Erysipelas, Syphilis, and Hydrophobia. This grouping together is surely very arbitrary, and more discordant from the ordinarily-adopted arrangements than need be. Is Croup, for example, more of a *zymotic* disease than Bronchitis (that is put in the 4th class,) Thrush than Quinsey (in the 4th also), Erysipelas than Purpura (in the 2nd), or Diarrhœa than Gastritis (in the 6th)?

The second class also—designated as the group of Sporadic diseases, "of uncertain or variable seat"—contains a somewhat anomalous commixture of maladies. These are Inflammation, Hæmorrhage, Dropsy, Abscess, Mortification, Purpura, Scrofula, Carcinoma, Tumor, Gout, Atrophy, Debility, Malformations, and Sudden Deaths. The only remark that we shall make on this arrangement is, that Gout might surely have been put into the 9th class, along with Arthritis and Rheumatism, rather than grouped with Purpura and Malformations. Might not Dropsy too be more appropriately regarded as a disease of the organs of Circulation than as a malady "of uncertain and variable seat?" But, indeed, it may be truly said that whatever nosological arrangement be adopted, it must necessarily be imperfect and open to objections.

| CAUSES OF DEATH. | DEATHS. | | | | |
|---|---|---|---|---|---|
| | 1838. | 1839. | 1840. | 1841. | 1842. |
| 1 Consumption | 59,025 | 59,559 | 59,923 | 59,592 | 59,291 |
| 2 Convulsions | 26,047 | 25,408 | 25,770 | 24,563 | 25,498 |
| 3 Pneumonia | 17,999 | 18,151 | 18,582 | 17,997 | 19,036 |
| 4 Typhus | 18,775 | 15,666 | 17,177 | 14,846 | 16,201 |
| 5 Debility | 12,634 | 15,143 | 16,225 | 16,189 | 17,339 |
| 6 Scarlatina | 5,802 | 10,325 | 19,816 | 14,161 | 12,807 |
| 7 Dropsy | 12,342 | 12,251 | 13,261 | 13,095 | 12,724 |
| 8 Small pox | 16,268 | 9,131 | 10,434 | 6,368 | 2,715 |
| 9 Violent deaths | 11,727 | 11,682 | 11,594 | 11,100 | 11,092 |
| 10 Measles | 6,514 | 10,937 | 9,326 | 6,894 | 8,742 |
| 11 Hooping-cough | 9,107 | 8,165 | 6,132 | 8,099 | 8,091 |
| 12 Hydrocephalus | 7,672 | 7,749 | 8,000 | 7,973 | 8,057 |
| 13 Gastritis and Enteritis | 6,061 | 6,524 | 7,260 | 6,980 | 7,249 |
| 14 Apoplexy | 5,630 | 5,293 | 5,451 | 5,581 | 5,362 |
| 15 Teething | 4,404 | 5,016 | 5,219 | 5,324 | 5,699 |
| 16 Paralysis | 4,975 | 4,910 | 5,490 | 5,495 | 5,559 |
| 17 Croup | 4,463 | 4,192 | 4,336 | 4,177 | 4,457 |
| 18 Inflammation | 5,816 | 4,940 | 3,965 | 3,306 | 3,178 |
| 19 Heart, disease of | 3,319 | 3,551 | 4,058 | 4,246 | 4,661 |
| 20 Sudden death | 3,012 | 3,696 | 3,610 | 3,901 | 3,802 |
| 21 Diarrhœa | 2,482 | 2,562 | 3,469 | 3,240 | 5,241 |
| 22 Atrophy | 2,018 | 2,142 | 3,013 | 3,535 | 3,970 |
| 23 Childbirth | 2,811 | 2,915 | 2,969 | 3,007 | 2,687 |
| 24 Lungs, disease of | 2,568 | 2,551 | 2,737 | 2,788 | 2,944 |
| 25 Liver, disease of | 2,590 | 2,762 | 2,681 | 2,706 | 2,704 |
| 26 Carcinoma | 2,448 | 2,691 | 2,786 | 2,746 | 2,941 |
| 27 Cephalitis | 2,178 | 2,368 | 2,581 | 2,498 | 2,456 |
| 28 Hydrothorax | 2,306 | 2,149 | 2,345 | 2,282 | 2,127 |
| 29 Bronchitis | 2,067 | 1,668 | 2,058 | 2,267 | 2,627 |

In this Table—which we have formed out of the lengthened and detailed one (No. 1) given by Mr. FARR—the diseases have been arranged according to their relative fatality. We have limited it, it will be seen, to such diseases only, as occasion a mortality of, and above, 2000 per annum: all others being excluded.

A few cursory remarks, in the way of comment, may be appropriately introduced here. The average mortality from Bronchitis—one of the most frequent and frequently fatal of diseases—is not much above 2,000 annually; whereas that from Asthma is set down at between 5 and 6,000, and that from Gastritis and Enteritis at between 6 and 7,000. This is certainly not what we should have expected; but then it is to be noticed that a large proportion of the fatal cases of Pneumonia—no fewer than about 18,000 per annum—might probably have been referred with greater propriety to Bronchitis. Again, it is not by inflammation of the air-tubes that Pertussis generally proves fatal?

The loss from Influenza (about 1,000 per ann.) is surprisingly small; but then that from Debility is immense.

Among the diseases "of uncertain or variable seat," there are no fewer than about 4000 deaths per annum attributed to that most vague of nosological terms, *inflammation*. Inflammation of what?—the reader will naturally ask. Not of the skin; for Erysipelas has a place in the first group. Not the viscera; for each viscus has its own inflammatory member. Not of the joints; for Gout, Arthritis, and Rheumatism will naturally claim that as their own.

The mortality, set down to the account of dropsical disease, in immense. First of all we have Dropsy, the general term; then Hydrocephalus, Hydrothorax, Ascites, and Ovarian Dropsy; these various forms of one disease causing death to the amount of nearly 23,000, in the course of the year.

The annual number of deaths from Gout does not exceed 200; but then it is to be remembered that not a few of the sudden deaths, especially in old people, are attributable to gouty affections of the heart and stomach. There is an "Arthritis" set down as distinct from Gout on the one hand, and from Rheumatism on the other; we do not quite understand what to make of it. The mortality from this disease does not exceed between 30 and 40 per annum.

That from Rheumatism is nearly 1,000; and yet we are told—and properly so—in medical books, that this disease is very rarely fatal: its effects or consequences—of which cardiac lesions are perhaps the most frequent—are often so, but not the primary disease itself.

The mortality from Convulsions—we suppose, in infancy and early youth chiefly—is very high; that from Epilepsy, which stands by itself, is only between 1,000 and 1100. From 25 to 30 deaths per annum are attributed to Chorea: if this be correct, how comes it that we know so little—next to nothing—of the pathology of this disease?

In the Respiratory group, after Consumption and Pneumonia, Asthma stands next on the list, in point of fatality. A vast number of the deaths however from this disease are unquestionably attributable to some organic diseases of the Heart or Lungs.

The mortality from Peritonitis is set down so low as between 2 and 300 a year. Puerperal fever does not occur in the catalogue at all; and we had therefore supposed that it might have been comprehended under the generic term of Typhus; but we afterwards found out that it was classed under the head of Child-birth—the deaths from which cause nevertheless fall short of 3000 per annum.

While Peritonitis is so very sparingly fatal, we were surprised to learn that nearly 700 deaths annually are attributed to Worms. Surely there must have been Remittent Fever, Tabes Mesenterica, or Atrophy at the same time, to produce so large a mortality. One remark more, and we close.

What a marked contrast does British present to Indian Pathology! For, whereas Diseases of the Liver constitute nearly a half of the mortality in Bengal, the number of deaths, in the table before us, from Hepatitis, Jaundice and Disease of the Liver does not exceed, in all, 4000 out of an annual mortality of between 3 and 400,000, in England.

We had concluded the preceding notice of the Registrar-General's Report, when we received the very valuable one by Mr. Martin, on the condition, in reference to hygiene, of certain large towns in England, which he had visited officially as one of the members of the "Health of Towns' Commission." We trust, for the benefit of Parliament and of the public generally, that the other Commissioners may perform their duties with as much zeal and ability as Mr. M. has done. He has evidently felt the importance of his task, and, by applying the energies of his vigorous and enlightened mind to its execution, has produced an admirable report on the sanatory condition of (part of) the working-classes of our population. We have extracted some of its most interesting statements, recommending strongly the general remarks, with which it closes, to the attentive perusal of all who wish to make themselves acquainted with the important subject of Medical Police.

The difference in the amount of mortality in the agricultural, compared with that in the manufacturing districts and towns in England is most striking. The ratio ranges from one death in 54 to one death in 29 of the inhabitants annually;—a deplorable example and proof of the difference in the physical condition and comfort of the respective classes of our labouring population. It is reckoned moreover that, out of every 1000 births, 221 only die under five years of age, in our agricultural districts; while not fewer than 385 die annually, under the same period of life, in all of our closely-built towns. This is a sad reflection; and yet no one can doubt for a moment but that the amount of mortality among our artisans might be most sensibly diminished by the introduction of appropriate sanatory regulations. When we remember that in Birmingham there are at least 33,000, in Manchester 83,000, and in Liverpool no fewer than 100,000, human beings compressed within the compass of a single square mile, and a vast proportion too of these inhabitants living in squallor, wretchedness and vice, how can we be surprised at the high rate of mortality in such places, more especially in the last-named town, our great western sea-port? Read what Mr. Martin says on the subject:—

"Resuming the comparison again, we find that, in a thousand deaths in the country districts, 202 persons attain the age of 70 years; while in Liverpool, for instance, but 90 persons out of 1000 attain to the same age; and while the average age at death in agricultural Rutlandshire is 38 years, it is stated to be but 21 years in Liverpool. Taking the same population, it has been shown by the Registrar-General that in four years a greater number died in town districts than in country districts by 99,752. Again, out of 1,000,000 of persons living, there occurs annually in the country, and where the population to the square mile is but 199 persons, 19,300 deaths; but in towns and where the population to the square mile is 5108 persons, there occur 27,073 deaths. We find also that fever —the great disease of adolescence and manhood—the disease that most afflicts men and women at the most useful and valuable period of life—the great destroyer of mankind in every climate—is bred and propagated in an especial manner in large towns; that towns present exactly in proportion as they are closely built and inhabited, the largest proportion of sickness and death from fever, not only as compared with the population, but with the total number of deaths from all causes. The fevers of the crowded quarters of London and of all the great towns is annually assuming a more formidable character, with an increase of its contagious virulence and power of propagating itself; its type everywhere indicating increased depression in the powers of life, as shown by the progressive lowering in the tone of the nervous and vascular systems."

Besides the continually devastating effects of Fever among the lower classes of the population in large towns, we find that almost every disease, without exception, is more fatal in the manufacturing than in the agricultural districts of our land. So much is this the case, that the increase of deaths among children is four-fold by epidemics, and nearly ten-fold by convulsions, in towns as compared with the country. Among adults too, the prevalent epidemic diseases are more than thrice as fatal in Liverpool and Manchester than in the country; while the deaths by diseases of the lungs are nearly doubled, those by diseases of the nervous system are as $5\frac{1}{2}$ to 1, and by diseases of the digestive organs as $2\frac{1}{2}$ to 1. All observation, continues our intelligent author, goes to demonstrate that the liability to Consumption increases in an enormous ratio with the increase of crowding and its accompaniment, defective ventilation.

Mr. Martin shews most convincingly, by a reference to the present ratio of mortality in the British navy (about 1·6 per cent. per annum) compared with what it was 40 or 50 years ago (7·2 per cent.,) how much may be done, for the improvement of the public health, by judicious administrative measures; and he avails himself of the opportunity of paying a well-merited compliment to the labours of the medical officers of our public services, in this most important field of professional enquiry. "It is not," he remarks, "too much to say that the merit of taking decisive measures for the abatement of this and other injurious influences, is due to the surgeons of our fleets and armies, wherein are now to be found the best and most extended examples of the benefits to be derived from a regulated and supervised plan of sanatory regulation applied to masses. The value of the knowledge, derived from the experience of the medical officers of the public services, has been practically though silently felt in every civil community, whether in Europe or America; but the merits of the authors have hardly in any instance, or at any time, been recognized in this country. This becomes the more obvious when the fact is borne in mind that, up to this day, there is not a principle in preventive medicine

that has not been long since indicated in the writings of Pringle, Lind, Blane, and of Drs. Robert Jackson, William Fergusson, and James Johnson."

That certain trades and occupations are injurious to the health of artisans is not to be disputed; but the grand cause of the fearful ravages of disease in our manufacturing districts is unquestionably to be traced to the filth and wretchedness of their dwellings, the insufficient supply or the bad quality of their food, their want of cleanliness arising from a defective supply of water, and the vicious habits that so generally—we had almost said necessarily—accompany personal and domestic discomfort. Some of the foreign governments have set an excellent example to ours in this respect, by the active sanatory regulations which they have established among their manufacturing and labouring classes; and amply have they been repaid for the performance of this most important duty, by the improvement in the state of the general health of their artisans. The cotton factories near Vienna are alluded to, as affording a striking illustration of the truth of this remark. Even in a mere financial point of view, it would be well if there was greater attention paid to the state of the dwellings and the general habits of our working classes. It is generally easier, and therefore cheaper in the long run, to ward off an evil than to remedy it, to prevent a disease than to cure it. If this be true in reference to private families, how much more is it in the case of large masses of men, crowded together in wretchedness and filth, without means of obtaining proper relief, and—a consideration of the highest hygienic importance—each one of whom often becomes a new source of morbific diffusion. The following remarks, on "the various losses occasioned to the public finances by *preventible diseases*," are full of force and truth:—

"It has been calculated that the total number of orphan children, on account of whose destitution relief was given from the poor-rates in the year ending Lady-day, 1840, was 112,000. Of the parents of this number, we are confident that accurate investigation would demonstrate, full one-half died of preventible disease.—The loss to the industrious classes consequent on sickness alone, has been variously estimated. One of the lowest calculations, rates the number of days of sickness in the year, experienced by a man, his wife, and two children above 12 years of age, at 29 days, or about one-thirteenth of the entire year. Estimating the weekly earnings of such a family at 40*s*., we have here a great loss by labour alone, without medicine and other contingent expenses.—'But this is vastly below the mark, although quite enough to prove how truly economical it would be in every way, to expend the same money upon airy, salubrious lodgings, conducive at once to health, morals, and respectability. In fact, there can be no doubt that the enormous sums spent every year in hospitals, infirmaries, and union workhouses, are incomparably greater than the expenditure necessary for preventing disease and pauperism.' This I believe to be true and easy of proof: indeed, we have only to turn to the singularly valuable 'Report' of Mr. Chadwick, to perceive as clearly as need be, how vast are the charges on account of sickness and mortality which are of easy prevention—how enormous the charges on the reduced duration of life—on the reduction by sickness of the periods of working ability or production—on the machineries for the suppression of much of the vice and crime, which comes within the province of the police—as well as for the relief of much of the destitution which comes within the province of the administrator's relief. According to the rate ascertained in eight Unions, Mr. Chadwick concludes that, in all the Unions, about 27,000 cases of

premature widowhood occur, and more than 100,000 cases of orphanage—all which may be ascribed to removeable causes. Mr. Hawksley estimates the loss in Nottingham alone, 'by the pressure of removeable causes of sickness and mortality at 300,000*l.* per annum.' It is quite unnecessary to pursue this subject farther. Innumerable details in proof are now before the public, and further description would but weaken the effect."

Mr. Martin, after shewing how much might be done by a system of more stringent parliamentary enactments and police regulations respecting the removal of all refuse and filth, the thorough ventilation of lanes and dwellings, the abundant supply of water for the purposes of washing as well as of food, the improvement of the sewerage, the removal of burial-places to the environs, the establishment of public baths, and of parks and open play-grounds, &c., concludes his Report with some admirable observations on the reciprocal influence of morals on public health, and of destitution and defective diet on the moral character. We give a sample :—

"I have said nothing directly on the influence of morals on health—a large and pervading subject—on which, however, it is proper to touch, because it is proved by every day's experience, that, in the large majority of instances, immorality and its consequent diseases are but the results of physical destitution or depression. How commonly do we find that the deep and protracted distress of mind which necessarily accompanies aggravated states of bodily suffering, produces that diseased action and reaction—that reciprocal moral and physical disturbance—which, sooner or later, destroys the balance of health. It is this double action that is tearing up the nervous system of the operatives—that system which, from its highly endowed sensibility, receives the first impress of every morbific cause, whether acting primarily on the mind or the body. The more impressible character of the nervous system in females, rendered less apparent by the passive fortitude of their nature, and by their greater power of endurance, comparatively, brings upon mothers, and through them upon their offspring, a mass of suffering greater even than that which afflicts the more complainant father.

"I am here stating important circumstances that have come largely under my observation. I have no desire to excite useless sympathy. It is proved that, by lowering the power of the nervous system, the mind is broken down even more rapidly than the body. It is proved that, so long as the physical powers are depraved and depressed, there can be no hope of moral improvement; and these facts, open to the observation of all, ought to be sufficient."

They ought indeed to be sufficient; and most fervently do we trust that the Government of this country will immediately enter upon the beneficent work of legislating for the hygienic condition of the poor, and may ere long have washed off the reproach—too justly made against us as a nation—of being more ready to punish crime than to reform the criminal, to deter by penal enactments than to encourage by the mild influences of paternal authority.

I. Observations on the Growth and Irregularities of Children's Teeth, followed by Remarks and Advice on the Teeth in General. By *W. H. Mortimer*. Small 8vo, pp. 129. Highley, 1845.

II. The Forceps. Vol. I. 1844.

III. On Diseases of the Jaws. By *Richard O'Shaughnessy*. Octavo, pp. 100. Calcutta, 1844.

Although in every department of the Art of Healing the impudent charlatan and uninstructed pretender have managed frequently, by reason of the credulity and ignorance of the public, to obtain a footing at the expense of educated and conscientious practitioners, yet Dental Surgery is their realm *par excellence*, in which they have until of late held an almost undisputed sway. The pain of toothache is torturing, and endurable by few, the remedy by extraction is speedy, simple, and complete, and hence he who has acquired a reputation for manual dexterity is sought for, be his other qualifications what they may. The loss or great decay of teeth produces grievous personal disfigurement, and many other serious evils, and he who promises reparation or prevention is listened to just in proportion as he promises boldly and indiscriminately.

Nor can we feel much surprise that the public is bamboozled in this manner, seeing that the men of upright character and scientific acquirements in this branch of the profession have taken no pains to furnish it with any test of competency, while medical men in general possess little more knowledge upon the subject than do their patients. With the exception of those of Mr. Bell there have not been any courses of lectures delivered upon this part of medical science at any of our schools, at least not until quite recently; and the works of that gentleman and of Mr. Fox are the only ones of a standard character generally accessible. The crowds of patients who flock to the casualty wards of our hospitals, who might, under proper tuition, form an invaluable means of instruction, have, by being consigned over to the tender mercies of raw and unaided pupils, suffered a vast amount more of pain than they need have done, and yet have ministered little or nothing to the improvement of those who have operated upon them. The consequence is, that when the student enters into practice he finds himself, in nine cases out of ten, incompetent to give useful and satisfactory advice as to the prevention or removal of diseases of the teeth, and unable to adopt the best operative procedures fitting for the case when these become unavoidable. This should not be, for although the subdivision of employments in a large town may render the reference of such cases to an accomplished dentist possible, and certainly then advisable, yet the exigencies of country practice do not admit of this. The appointments which of late have been made in several of the hospitals are good signs of improvement, and we hope that speedily no medical school will be without its Professor and Demonstrator of Dental Surgery.

In the mean time we are glad to find the Dentists themselves are putting their shoulders to the wheel, and that, at least the well-educated portion of them, are protesting against the admission of persons to the practice of the art without examination or other guarantee of competency. They justly feel that, until some line of separation is drawn between the advertising quack or mere expert handicraftsman, the *profession* of surgeon-dentist can be scarcely said to exist. To this end they have established a journal, and although, in advocating their just claims, it has proved rather extreme in some of its denunciations and fanciful in some of its suggestions, its general tendency is well worthy of encouragement. Among the recommendations urged by the *Forceps* is the establishment of a College of Dentists; but for this there exists neither *materiel* nor necessity. The new medical examining board may be empowered to insist upon peculiar studies, and a particular examination on the part of such as intend to devote themselves to Dentistry; and while it thus affords the public a guarantee of competency, will offer to the candidate a distinct professional *status* he can in no other way so effectually attain. It is truly stated in the publication in question, that the diploma of the College of Surgeons now held by many dentists, and which has been instrumental in procuring for some of them appointments, is no proof whatever of their skill or attainments in this branch of the profession. In the absence, however, of all tests of qualifications of any kind, it has proved some security to the public, that its holder has taken some pains to inform himself of the structure, functions, and surgical diseases of the human frame, and honourably distinguishes him from those who have not done so. We believe the interests of the public and of the dentist will be best consulted by insisting that his professional education shall, at all events in its preliminary stages, be the same as that of the members of other branches of the medical body.

Mr. Mortimer's little work is chiefly addressed to the public, and contains useful advice, some of which is not to be slighted even by professional persons. It is written in a high and proper tone, reprobating and exposing several of the quackish practices which are so much in vogue. We select a few extracts:—

*Lancing the Gums.*—"I stated it will be recollected that the teeth were situated beneath the gums in each jaw, and that it was the pressure of the edge of the tooth on the internal parts of the gum that caused the irritation and pain. Now the depth the tooth has to perforate being considerable, it stands to reason that if the gums are lanced at the first period of inflammation, they will reclose, and as often as the irritation returns, the operation must be repeated; besides which the gums will become harder each time they re-unite. For, although not visible to the eye, a cicatrix is formed, which renders it still more difficult for the tooth to pierce them. The impropriety of performing the operation at this period must be evident, and will account for the *bad practice* complained of. But when the teeth are sufficiently advanced, so as to show their presence by a white mark, caused by their pressure on the internal parts of the gums; or when a tooth has partially perforated them, then the lancet may, nay *ought* to, be used without delay; for the gums cannot again completely re-close, and the tooth will come through without giving any more pain. In all other cases the lancet should only be used when all other efforts have failed. But if, notwithstanding all our efforts, the inflammation and irritation continue, and cause excessive

fever—that frequent returns of the convulsions are apprehended ; it must then be left to the sagacity of the medical attendant when he ought to lance the gums ; and I have only in these cases to recommend that the wound may be as deep as possible, and directly over the teeth that are supposed to cause the pain."

We have extracted this passage to protest against the doctrine it teaches, and to express our regret that parents may hereafter quote the author's book in enforcement of the prejudices which they so often entertain against this simple yet beneficial operation. It is not the fact that lancing the gum renders the subsequent penetration of the gum by the tooth more difficult, the cicatrix in truth yielding more readily to the action of the absorbents than the original structure. So, too, deep incisions are of vast benefit in relieving the congested and tense condition of the gums long prior to the approach of the tooth to the surface, perhaps months before it is cut, especially when the salivation is not profuse ; and surely the various accidents which the author admits depend upon this condition of the gum are most rationally removed by attacking the cause, rather than by first employing other measures.

*Early Cleansing of the Teeth.*—" Children sometimes experience toothache from the first teeth decaying before the others are ready to supply their place ; but this is owing, in a great measure, to a want of cleanliness, in not using a toothbrush. I must here notice one of those prejudices which it is difficult to account for : viz., the obstinacy with which some mothers refuse to allow their children's teeth to be cleaned. I have no hesitation in saying, that as soon as it is possible to make the child open its mouth, the teeth it may have ought to be rubbed. In very early age, the sponge is sufficient. A child ought to be taught to brush his teeth as soon as he is taught to wash his hands and comb his hair ; and a habit thus inculcated in early life will never be forgotten. As to the supposition, that the brush will wear the enamel away, it might be argued with equal truth, that the comb will wear the head away."

*First Permanent Teeth.*—After cautioning against the premature removal of the milk teeth, and recommending two amalgams for the purpose of arresting their decay, Mr. Mortimer continues :—

" At about six, the first teeth of the second set begin to appear. They are large double teeth, and are situated behind the last milk teeth at each extremity of the upper and lower jaw. When these teeth are perfectly formed, they serve, being placed one over the other, as a support to the jaw, while all the first set are being changed. These teeth, from the early age at which they appear, and from want of attention to cleanliness, almost always decay in early life, and very often shortly after they have made their appearance. During the progress of dentition, no attention is paid to them, under the supposition that they are milk teeth, and that consequently they will be changed ; if therefore they decay, no notice is taken of them until they give pain, when the child is taken to the Dentist to have them extracted.

" A *medical* gentleman brought his son to me some time since, begging me to remove one of these teeth that was in a very decayed state. When I complained of the negligence that had allowed his second teeth to decay, instead of having them stopped as soon as any caries appeared, he quite stared, declared it was a first tooth ; and it was not until I had produced several anatomical preparations to support my argument, that he could be convinced to the contrary. Another medical gentleman, who had resided for some years out of Europe, brought five of his children to me, and we found that *sixteen* out of *twenty* of these teeth had

been removed by the surgeon in whom he had confided where he had been residing; and he assured me he had no doubt but that several of them had been *extracted perfectly sound.* That the public should form an erroneous opinion is pardonable; for, at first sight, it appears strange that Nature should begin by giving us too large double teeth, whereas in the first dentition, she began by the front ones; but one moment's reflection shows us that it is necessary; since, as all the other teeth are to be shed, there would be nothing to keep the jaw in its place, and allow the others to come out regularly. As to my own experience, I can aver, that out of any 100 children that are brought to me of more than 11 years of age, at least 90 have some of these teeth in a decayed state; and 95 out of 100 adults, have lost one or more of them; whereas, had they been properly attended to, they might in all probability have been saved.

"I cannot, therefore, too seriously impress upon my readers the necessity of paying the greatest attention to these teeth, and as soon as any discoloration appears, to have them stopped; and even without that appearance, to have them examined from time to time—for there exists a species of decay not perceptible to the eye, as no discoloration of the teeth takes place, which increases rapidly, and is extremely sensitive when far advanced, but which, if taken in time, may be effectually stopped. Whenever the child is taken to a dentist, always have these teeth probed; but on no account have them extracted, unless they are so far gone that there is no possibility of saving them. There cannot be the least difficulty in distinguishing these teeth from those of the temporary set. I mentioned that there were ten milk teeth in each jaw, and that they were all in their places at about three years of age. The teeth now alluded to appear only at six, and are situated behind the others at the end of the jaw; counting, therefore, five teeth on each side from the centre ones, it is impossible to make any mistake; they are larger, stronger, and yellower than the milk teeth, which have always a blue milky appearance."

There are several other useful cautionary observations respecting the removal of the milk teeth, which are thus summed up. 1. Only remove two teeth at a time, and always the corresponding ones. 2. Never remove the adjoining teeth till those previously extracted are replaced; that is, until they appear at the edge of the gums. 3. If there is not room for the four front teeth, do not remove the canine, but the tooth next it.

The mode of correcting irregularities of the teeth is illustrated by cases and diagrams; but to these we can only refer. We may however extract an additional observation upon the importance of not removing children's teeth too precipitately.

"I cannot continue without referring for a minute to what was said, concerning the necessity of preserving the milk teeth as long as possible. We find that the jaw increases so little in front, that if the least portion of the space destined for the six front teeth is taken up by the adjoining side ones, the canine teeth must come up out of the circle of the other teeth. But if they (the milk canine teeth) are kept in the mouth, there will be plenty of room for the side teeth, which cannot then encroach upon the space allotted to those that are to replace them. The immense increase of the jaw at the side will always permit us to calculate, that there will be room enough for the grinders. Independently of this, we must take into consideration the probability of being obliged to extract some of the first double teeth that appeared at six years, and which would give us more room than we required.

"Never be too hasty in removing a good second tooth to make room for the others. If a tooth appears irregularly, endeavour, if possible, to rectify it by the removal of some of the first teeth, provided it can be done with impunity, and without running the risk of displacing the others. If not allow the jaw to expand,

and the teeth to go their own way, until the age of 14; when, if it be found impossible to rectify the deformity by artificial means, then, and only then, the teeth that are in the way should be removed. In all cases where it is found absolutely necessary to extract one or more teeth in either jaw, to make room for others, *never*, under any pretext whatever, allow either of the *six front teeth* to be removed; those next to the canine teeth, called the small grinders, of which there are two on each side, are the teeth to be removed, and none else. It may be said of a Dentist as it is of a Surgeon, that he is clever who performs an operation well, but he is more clever who can cure without an operation. Patience and perseverance are indispensable requisites for those who wish their children to have a good and healthy set of teeth."

*Cleanliness* is an important (and indeed the only known one) *preservative* of the teeth in the adult as in the child.

"My advice to persons with regard to cleaning their teeth is this:—Every morning clean the teeth well, both inside and outside, with a brush (neither too hard nor too soft), and some tooth-powder; rinse the mouth afterwards with water, always at a warm temperature, about that of the mouth, into which a little aromatic essence may be poured (Eau de Cologne is as good as any other, unless there is a disease of the gums), to give it an agreeable flavor, taking care to pass the water through the interstices of the teeth (which may be done by closing the mouth) to remove everything that may have escaped the brush. At night pass a soft brush lightly over the teeth; powder is not necessary; and rinse the mouth well. If this treatment will not prevent the teeth from decaying, all the lotions and powders in the universe will only tend to make them go faster. As the teeth have, more or less, a latent predisposition to decay, it is necessary now and then to have them examined. If the least discoloration appears on them, instantly apply to a dentist, that it may be stopped. * * * * * * I have often seen teeth that were stopped by the late Mr. Wayte, some 30 or 40 years ago, remain as perfect as the first day. There can be no doubt, therefore, that a tooth properly stopped, will be preserved from any further decay in that spot. It *is* necessary that all the decayed part should be removed, but it is *not* requisite that a quarter of the tooth should be scraped away, as I have been informed is practised by some dentists. This looks like quackery, and is intended to make the operation appear more difficult. But recollect, *procrastination* is fatal to the teeth; if you delay from day to day, when you know there is decay, it may happen that, when you go to have them stopped, they will be so far gone that there will be no means of using the necessary pressure without exciting the sensibility of the nerve: in which case the operation cannot be effectually performed, and the loss of the tooth may be the result. * * * * * * * It is not an uncommon occurrence for persons whose teeth are in a very decayed state, whether from constitutional causes, or from the excessive use of calomel, to suppose that nothing can be done to arrest the decay, and that therefore the only plan is to allow them to go on until they are all gone, when recourse may be had to artificial means for supplying their place. It is never too late to attempt to arrest the progress of decay in the teeth. Some, it is true, may be beyond the reach of art, but I never remember to have seen a case in which all the teeth were in the same advanced state. Decay invariably attacks the teeth progressively, and may, as I have before stated, be always arrested before it has penetrated the cavity that contains the nerve. The excessive use (I may say abuse) of calomel causes the greatest havoc to the teeth, and when it has been given in large quantities, medical men ought never to forget to urge upon their patients the necessity of having them attended to as soon as their recovery will admit of it."

*Filing the teeth*, for the removal of the carious part, so generally practised by dentists, is entirely disapproved of by the author.

"The only reason I shall here give for not filing the teeth is this. If the sides of the orifice are removed by the file, and the operation does not arrest the progress of the decay, you then can never stop the tooth afterwards; and in the course of a few years it will become so discoloured that it must be extracted. It will be asked how are we to stop a tooth that is decayed at the side, when the proximity of the adjoining tooth is such that there is no possibility of getting at it? Take a thin piece of India-rubber, place it between them, so that it shall fit tight, and the teeth will separate by degrees. It must be removed every morning, and a larger piece put in its place, and in three days there will be sufficient space to allow the decayed part to be removed, and the tooth to be effectually stopped. As soon as the operation is concluded, and the Indian-rubber removed, the teeth will, in 24 hours, be in their primitive position. This applies to the six front teeth. For the side ones, drill a hole over the decay, enlarge it sufficiently to work the decay away, and stop it."

The opinion that *Scaling the Teeth* injures them is unfounded.

"The tartar is nothing more than a calcareous secretion that impregnates the saliva, and if a nucleus is allowed to form, it rapidly collects on the teeth. It should be removed by the operation of scaling, which may be performed without endangering the teeth at all. Some persons suppose that removing it destroys them; similar, we presume, to the French, who suppose that combing children's hair is unhealthy. A distinction should be made between the tartar and a discoloration that sometimes settles round the necks of the teeth. If this latter is scraped away with the instruments too roughly, it may injure the enamel, but not so the removal of the tartar. Tartar does not decay the teeth, but causes the gums to recede; so that in time the teeth loosen and fall out. Once a year, and with some persons less frequently, is sufficient to have it removed. A proper attention to cleanliness will, when young, almost always prevent its collection. After a serious illness the teeth should be always cleaned by a dentist; for, during its continuance, seldom any attention can be paid to them; and the feverish state of the stomach, added to the acids mostly contained in the medicines, will do more harm to them than anything else. But if they are cleaned as soon as the convalescent can support the operation, which *should not* give the least pain, the teeth will grow healthy again with the rest of the body."

We will conclude our notice of this little work with an extract concerning *Tooth-powders*.

"Which is the best powder? This would be a very difficult task to decide. Most dentists prepare it; and it is reasonable to suppose that a dentist of reputation will not give anything likely to be injurious to the teeth, and, provided the powder contain *no acid*, and is quite impalpable, it seldom does harm. But if I cannot name which is the best, I shall at all events name two of the very worst, viz., soot and charcoal. 'What!' it will be exclaimed, 'soot and charcoal not good! Why, look at the chimney sweeps, in support of the former; and almost everybody recommends the latter.' I shall simply observe, as to the first, that what looks beautifully white in a sooty-faced chimney-sweeper, would look passably yellow and dirty in a young lady of eighteen. It is the contrast that makes the teeth appear so white and the gums so ruddy. Soot contains a considerable quantity of acid, and is on that score bad. I have, moreover, examined several chimney-sweepers' mouths, which were far from being healthy. With respect to charcoal, and all calcined substances of the same nature, they are decidedly objectionable. Charcoal has, from its antiseptic properties, the

peculiar power of drawing to itself all extraneous matter; so that anything in a putrid state being surrounded by it will be divested of its fœtid matter, which is transferred to the charcoal. This property would therefore make it a very valuable article, if cleaning the teeth consisted merely in putting a piece of it into the mouth, and there allowing it to be stationary; but, being reduced to a powder, and rubbed on the teeth, some of the particles must get between them, or lodge where decay may have commenced, and thus form a nucleus for collecting extraneous substances, instead of neutralizing them. If we could be sure that no particle of charcoal would remain in the interstices of the teeth, after we had rinsed the mouth, it would not be objectionable; but, as that is impossible, a substance which has so dangerous a tendency, ought to be discarded. Let those persons who are in the habit of using these powders examine their teeth, and they will find that there is a blueish black appearance between them that is not natural. It does not however follow, that all those persons who have been in the habit of using charcoal must necessarily have bad teeth; it may tend to decay them, and that is sufficient for me to reject it: added to which, it is dirty."

The volume is terminated by an essay on Artifical Teeth, which those in want of these useful implements will do well to consult.

Mr. O'Shaugnessy has published his pamphlet upon Tumours of the Jaws, requiring excision or extirpation, especially for the instruction of the students and graduates of the Bengal Medical College. Although the removal of the whole or part of the superior or inferior maxilla is now recognized as a legitimate surgical operation, the author seems to us, considering he is addressing young men, not to have dwelt sufficiently upon its formidable nature, and the rarity of the cases in which it can with propriety be performed. When we know that experienced hospital-surgeons have, dazzled by the *eclat* consequent upon brilliant surgical achievements, undertaken it in cases wherein the speedy reappearance of the disease exposed their error almost before the praises bestowed upon them had died upon their ears; and when we consider the acknowledged difficulty of determining the malignity of some of the tumours affecting these parts, we think more cautionary observations should have been addressed. When, too, we know with what care some of our most employed surgeons have refreshed their knowledge of the parts implicated in operations they were about to undertake, we think the injunction, "I would therefore recommend the young surgeon, before proceeding to this operation, to refresh his recollection of the anatomy of this region, *practically if possible*," is worded far too mildly. Here is no pressing urgency, as in hæmorrhage or in hernia, and let no man venture upon this formidable procedure without having again and again examined the parts just prior to commencing it.

The diseases enumerated and briefly described by Mr. O'Shaugnessy as those which justify an operation, are Fibro-cartilaginous Tumours, the benign form of Osteo-sarcoma, Spina Ventosa, and Exostosis. Besides these are other affections of a less formidable character, and requiring less extensive interference, as Epulis, or solid growth from the gums and periosteum, Exfoliation, Abscess of the Antrum, and Abscess at the side of the lower Jaw. Upon the last-mentioned affection there is the following observation:—

"It sometimes happens that an abscess forms on the side of the inferior maxilla, either internally, between the cheek and gums, or externally, near the symphysis of the chin, or on the side of the bone close to its angle. This is at first frequently taken to be a common collection of matter, which, when opened, and emptied, is expected to heal in the usual way, but a sinus forms, and continues to discharge through a fistulous opening. If the patient happens to apply to a medical man who is ignorant of the cause of his disease, the chances are he is subjected to a variety of treatment, for scrofula, caries of the jaw, &c., &c., when by merely extracting a tooth it might be cured in a few days. The crowded state of the teeth causes inflammation in the periosteum and sockets of these bodies, and until room is made by extracting one of them, the discharge continues. These abscesses generally form in persons from the age of 19 to 24, when the wisdom teeth are coming forward. It is not in general of much consequence which of the teeth in the neighbourhood of the fistula is extracted, but whether the teeth are sound or unsound, one must be taken out before the discharge of matter ceases, which it is usually found to do in a day or two after the tooth is drawn, although it may have existed for years previously."

The surgical anatomy of the jaws and the various stages of the operation are clearly described. Five cases in which it was successfully performed are also given. Four of these consisted of osteo-sarcoma and one of spina-ventosa. In two, the superior maxilla was completely, and in one, partially extirpated. In one of the remaining cases a part, and in the other the whole, of the lower maxilla was removed. They form a valuable contribution to this branch of surgery, and do great credit to the surgical skill of the narrator.

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THE ACTUAL PROCESS OF NUTRITION IN THE LIVING STRUCTURE DEMONSTRATED BY THE MICROSCOPE. Second and Third Series of Experimental Researches. By *William Addison*, F.L.S., Member of the Royal College of Surgeons in London, and Surgeon to H. R. H. the Duchess of Kent. Malvern, 8vo. London, Churchill, 1843—5.

MR. ADDISON has made many excellent observations respecting several constituent parts of the blood, for which, and especially considering that his locale is not favourable to scientific pursuits, he merits high commendation. This gentleman has likewise contributed something to our knowledge of the minute structure of the lungs; though, as we stated in our last number, when noticing Dr. Carpenter's Physiology, it is certain he has fallen into some most serious errors in his account of those organs, and more particularly by attributing the formation of the air-cells to the pressure exerted in the first respirations by the air in the ultimate divisions of the bronchi. Mr. Addison may be assured that, in the construction of organized bodies, Nature never proceeds upon such bare mechanical principles; a fact which must never be neglected if it be wished to penetrate to the general laws regulating the development of animal and vegetable structures.

In the treatises before us the author ascends to higher ground; indeed, if that which the title-page indicates were actually realized, the discovery, namely, of the law of nutrition, Mr. Addison would have accomplished for the science of organic life, what the law of definite proportion has effected for chemistry, and that of gravitation for matter generally, and might therefore claim a place by the side of Newton and Dalton. But such is not the case. We say this in no unfriendly spirit, or as implying any censure beyond what must attach to an undue indulgence in hypothesis; for no physiologist, who knows the amount of exact information we possess, and who is unbiassed by partial views, will hesitate in giving expression to his opinion, that the time has not yet arrived for the enunciation of the principle of nutrition. And this being so, it is merely an encumbrance to have theories framed, which must be cleared away, lest they should, by misleading, impede, as in similar cases they always have done, the progress of science.

We may add that the present is rather an inauspicious time for the appearance of a first, second, and third series of "Researches" upon the recondite matters here treated of; for cautious observers have had their faith in such transcendental speculations, not a little shaken by a somewhat similar series respecting the metamorphoses of the red corpuscles and the hypothesis of the double spiral of Dr. M. Barry.

In making this assertion, we in no degree participate in the somewhat ungenerous attempts which have been made to depreciate the high merits of the last named eminent physiologist as an original and successful cultivator of embryology: we wish simply to express our conviction of the evils which must result from attempting to establish general laws upon such totally insufficient grounds as we find in these "Researches." Many of our readers are doubtless acquainted with the leading views of Mr. Addison, as these have from time to time appeared in the weekly and other periodicals: this circumstance will render any lengthened notice in this place unnecessary.

The author contends that both the fibrin and the serum of the blood are contained, during the circulation, in the colourless, or lymph corpuscles; that when blood is drawn from its containing vessels, the colourless corpuscles, "from the sudden change of temperature to which they are exposed, or from some other causes, burst and discharge their contents, consisting of liquor sanguinis and molecules;" and that the fibrin then assuming a solid form, "very shortly fibrillates," and so effects the coagulation.

"What, then, it may be asked, is the nature of the liquid in which the corpuscles move when in the living vessels? It is impossible to determine: for it cannot be procured for experimental examination without being mingled with corpuscles, nor, according to these views, without some of them bursting and mingling with it their own contents." P. 8, *Second Series.*

That the colourless particles form an important part of the blood; that they are cells containing some particular matter; that they are greatly accumulated during the inflammatory condition, and consequently where the fibrin is augmented in quantity; and that they become frequently ruptured after their removal from the blood-vessels, is abundantly proved in these researches, and by those of other observers. But we do not conceive

that the position, namely—that the fibrin and serum are, during the circulation, contained in the above-named corpuscles, is in any degree proved as a fact. Such an opinion is opposed to the generally received views, and especially to those of a most careful microscopist, Mr. Wharton Jones, who, it is will known, contends that fibrin is elaborated by the metamorphosing powers of the *red*, and not of the *colourless* particles.

Mr. Addison has discovered very interesting movements of the minute molecules contained in the colourless corpuscles of the blood, and also in corpuscles found in various other fluids—as that of inflamed pimples, of the vesicles of shingles, &c. The following is an account of these motions as seen in a drop of blood taken from the leg of a young woman suffering from Erythema Nodosum.

"I found in it nearly as many colourless-cells as red ones. The colourless-cells were uniformly molecular, smaller than the mucous-cells in saliva; but, like them, filled with a number of minute dark objects or molecules. I added a drop of water at the temperature of 90, having one drop of liquor potassæ to the ounce. The colourless-cells gradually increased in size; and in the course of from three to five minutes, by very careful attention, I could see, in the majority of them, very active motions among the contained molecules. I also saw some of them open and discharge myriads of minute active molecules, without any immediate alteration in their figure or appearance. The motions of the molecules remaining in the interior of the cells, however, gradually ceased after this event, and the cells slowly changed, showing large coarse granules, or discs." P. 3, *Third Series*.

Motions similar to those here described have been noticed by other, and some of them earlier, observers. Thus Schwann saw them among the granules contained in the cells of the germinal membrane of the hen's egg; and Dr. Todd and Mr. Bowman state, in their "Physiological Anatomy," (p. 60,) that a molecular motion of the same kind may be seen in the very minute granules, which occupy the cells of the membrana pigmenti of the choroid coat. We have ourselves seen very active motions of the same kind in cells taken from a malignant growth of the penis, where they were first noticed by an intelligent friend, and by him pointed out to the writer. It is difficult to assign the true cause of these remarkable movements, which offer a most interesting microscopic phenomenon. Brown's molecular motion occurring equally, as it does, extremely minute particles of matter, whether organic or inorganic, is evidently not of a vital character; in fact, it is known to depend upon the evaporation of the fluid, in which it is requisite, in order to produce the movements, the particles should be immersed. In the case before us, the corpuscles in which the phenomenon takes place, are exposed in the manipulation necessary to prepare the object for the microscope to the influence of causes, such as evaporation, and, in some cases, to endosmose, which are in themselves efficient to produce the movements under consideration; and it is to these physical causes, which, in the case of molecules varying from the $\frac{1}{5000}$ to the $\frac{1}{15000}$ and $\frac{1}{24000}$ of an inch, are all powerful, we are inclined to attribute these motions rather than to any vital influence. The notion of Dr. Houston, apparently adopted by the author, that the molecules are self-active, and perform "voluntary evolutions," we hold to be totally fallacious.

A large part of these researches consists of experiments to prove the identity of mucous and pus globules with the colourless corpuscles of blood; or rather, we might say, to show that these said corpuscles, called by the author "nutritive particles," are the common source of all parts of the body—fibrous tissue, mucus, saliva, and "other secretions," and epithelia; and, as these wonder-working corpuscles, also, elaborate and contain all the fibrin and albumen of the blood, also of muscle, nerve, and so forth. This is one of those sweeping generalizations, springing from a favourite hypothesis, which have become rife in late years owing to the novelty and interest attaching to the use of the powerful and excellent microscopes now constructed. All we can say is, that, after going through these two treatises, we hold most of the positions to be "non proven;" many of them rest only upon hypothesis; and of a few only can it be predicated, that they are supported by sufficient facts to give them some reasonable ground of probability. Mr. Addison finds that, if equal parts of pus and liquor potassæ be well mingled together, they form "a transparent and exceedingly plastic compound—mucus or tissue." (3rd Series, p. 17.) Further, that in this way is produced "a most delicate, thin, transparent, and highly elastic fibrous membrane, exactly resembling some of the thin transparent membranes of the embryo, except in the presence of blood-vessels, or the structureless basement membrane of Mr. Bowman." That a film may thus be formed we doubt not, but it is by no means thence proved that it is an organized membrane; at all events, such an inference seems to be opposed to the observations of one whom we must hold to be a better authority in a question like this, Mr. J. Goodsir, who affirms that the basement membrane is the result of the aggregation and condensation of nucleated cells.

Some of Mr. Addison's experiments on inflammation have given interesting results, though the value of these, as elsewhere, is lessened by the intermixture of speculations which are not proved, and which we hold to be most improbable; such, for example, that the red corpuscles of the blood are not only detained in the inflamed vessels, but that, passing through the friable walls of the capillaries, they enter into the composition of the surrounding tissue. (Second Series, p. 59). A change is described as occurring in the blood in consequence of irritation, which is important, as showing a condition not before noticed, so far as we are aware, and which may be *one* of the causes of the obstruction that follows the application of a stimulus to the capillary vessels: we allude to a thickening and stickiness which occur in the blood under these circumstances, and which the author attributes to the accumulation of colourless cells and numerous molecules. (3rd Series, p. 83).

The main result which Mr. Addison aims at obtaining by all these multitudinous and somewhat laboured researches, is the establishment of a *theory of nutrition*. Our limits will not allow us to follow the author through all these details, and we must therefore rest satisfied with stating that he conceives the colourless corpuscles of the blood more or less modified to be the grand source of all nutritious matter; that the colourless blood-corpuscles adhere to the tissue forming the boundary of the blood-channels; that they pass into, and contribute to form the tissue (that is, the parietes of the capillaries,) and are afterwards evolved or thrown off

from the nearest free surface—a follicle, crypt, or duct; the epithelial scales and the mucus, or the secretions flowing from the follicles or ducts, being the result of the secretions flowing from the follicles or ducts, being the result of the dissolution of the cells and tissues. We must express distinctly our conviction, that no such passage of colourless corpuscles through the walls of the capillaries ever does in reality take place. Those who have carefully studied the appearance which these vessels present when examined by the microscope will, we think, agree with us in this conviction. In whatever part of the body the capillaries are thus inspected, they present limiting walls as definitely marked as the neurilemma of the primary nervous tubules; and through walls thus disposed, it is difficult to conceive of the transmission of bodies having the size and character of the colourless corpuscles. It is likewise necessary to point out that the theory of nutrition here advocated is opposed to the views flowing from Schwann's researches in the genesis of the *nucleated cell*; at least it seems to us difficult to reconcile the exact and satisfactory investigations upon this latter process, with Mr. Addison's account of the production of the epithelium and other tissues.

In conclusion we may remark, that although the grandiloquent and Baconian style adopted by the author, and his frequent indulgence in speculation and inference which the facts adduced in no degree support, greatly deteriorate the value of these researches, they are well worthy of the attention of all who are interested in the progress of minute anatomy.

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A SYSTEM OF SURGERY. By *J. M. Chelius*, Doctor in Medicine and Surgery, Public Professor of General and Ophthalmic Surgery, Director of the Chirurgical and Ophthalmic Clinic in the University of Heidelberg, &c., &c. Translated from the German, and accompanied with additional Notes and Observations. By *John F. South*, Surgeon to St. Thomas's Hospital. 8vo. Parts I. & II., pp. 208. Renshaw, 1845.

THIS work has long been the chief text-book on surgery in the principal schools of Germany, and the publication of five editions of it in the original and of translations into no less than eight foreign languages, show the high estimation in which it is held. As a systematic work on surgery it has merits of a high order. It is methodical and concise—and on the whole clear and accurate. The most necessary information is conveyed in the shortest and simplest form. Minor details and fruitless speculations are avoided. It is, in fact, essentially a practical book. This work was first published nearly twenty years ago, and its solid and permanent reputation has no doubt led Mr. South to undertake the present translation of the latest edition of it, which, we are informed, is still passing through the press in Germany. We should have felt at a loss to select any one better qualified for the task than the Translator of Otto's Compendium of

Human and Comparative Pathological Anatomy—a surgeon to a large hospital, whose industry and opportunities have enabled him to keep pace with the improvements of his time. In a work like the one under review, which is intended chiefly as a class-book for students, however excellent the original may be, some additions and corrections are required in a translation. The principles of surgery must of course equally apply in all countries and climates; still, the character of the practice in Germany, Great Britain and France differs to such an extent, that the directions suited for the practitioners in one country would not altogether meet the views of those in another. The necessity for these corrections, if frequent, interferes, however, with the utility of the work, and to a certain extent renders the translation unsuited to be an elementary book for students, who should indeed be informed of the latest improvements in surgery, but whose attention ought not to be distracted by critical remarks and cautions against adopting the views recommended in the text. The length of Mr. South's notes will perhaps surprise our readers. In the first thirty pages, they bear a proportion to the text of about two-thirds to one-third, consisting chiefly of compilations from the works of the most recent writers on inflammation. Now, if so much additional matter were required to adapt the work for English readers, we think that the indefatigable translator might, without much increase of labour, have himself written a systematic book on surgery, which would be more useful and more acceptable to the rising generation of surgeons than the work he has translated and edited. We think too, that these very copious notes affect the character of the original. They clearly indicate its poverty and insufficiency, and if they render the translation more comprehensive than the original, they likewise render it less concise and didactic. It is time, however, that our readers should have an opportunity of forming their own opinion on the merits of this work, and of the translator's labours.

After a brief introduction, giving a definition of Surgery, and exhibiting its relation to the healing art in general, the author gives "the following division for the setting forth of surgical diseases which, if it be open to many objections, is, however, an arrangement of diseases according to their internal and actual agreement:—

"I. DIVISION.—*Of inflammation.*

1. *Of inflammation in general.*
2. *Of some peculiar kinds of inflammation.*
   *a.* Of erysipelas; *b.* Of burns; *c.* Of frost-bite; *d.* Of boils; *e.* Of carbuncle.
3. *Of inflammation in some special organs.*
   *a.* Of inflammation of the tonsils; *b.* Of the parotid gland; *c.* Of the breasts; *d.* Of the urethra; *e.* Of the testicle; *f.* Of the muscles of the loins; *g.* Of the nail-joints; *h.* Of the joints, viz.
   a. of the synovial membrane; b. of the cartilages; c. of the joint-ends of the bones, viz. *aa.* in the hip-joint; *bb.* in the shoulder-joint; *cc.* in the knee-joint; and so on.

II. DIVISION.—*Diseases which consist in a disturbance of physical connexion.*

1. *Fresh solutions of continuity.*
   A. Wounds; B. Fractures.

II. *Old solutions.*
  A. Which do not suppurate, viz.
    *a.* False joints; *b.* Hare-lip; *c.* Cleft in the soft palate; *d.* Old rupture of the female perineum.
  B. Which do suppurate, viz.

i. *Ulcers.*
  1. In general.
  2. In particular.
    *a.* Atonic; *b.* Scorbutic; *c.* Scrofulous; *d.* Gouty; *e.* Impetiginous; *f.* Venereal; *g.* Bony ulcers or caries.

ii. *Fistulas.*
  *a.* Salivary fistula; *b.* Biliary fistula; *c.* Fæcal fistula and artificial anus; *d.* Anal fistula; *e.* Urinary fistula.

III. *Solutions of continuity by changed position of parts.*
  1. Dislocations; 2. Ruptures; 3. Prolapses; 4. Distortions.

IV. *Solutions of continuity by unnatural distension.*
  1. In the arteries, aneurisms; 2. in the veins, varices; 3. In the capillary vascular system, teleangiectasis.

III. DIVISION.—*Diseases dependent on the unnatural adhesion of parts.*

1. Anchylosis of the joint-ends of bones; 2. Growing together and narrowing of the aperture of the nostrils; 3. Unnatural adhesion of the tongue; 4. Adhesion of the gums to the cheeks; 5. Narrowing of the œsophagus; 6. Closing and narrowing of the rectum; 7. Growing together and narrowing of the prepuce; 8. Narrowing and closing of the urethra; 9. Closing and narrowing of the vagina and of the mouth of the womb.

IV. DIVISION.—*Foreign bodies.*

1. *Foreign bodies introduced externally into our organism.*
  *a.* into the nose; *b.* into the mouth; *c.* into the gullet and intestinal canal; *d.* into the wind-pipe.
2. *Foreign bodies formed in our organism by the retention of natural products.*
  A. Retentions in their proper cavities and receptacles.
    *a.* Ranula; *b.* Retention of urine; *c.* Retention of the fœtus in the womb or in the cavity of the belly (Cæsarean operation, section of the pubic symphysis, section of the belly.)
  B. Extravasation external to the proper cavities or receptacles.
    *a.* Blood swellings on the heads of new-born children; *b.* Hæmatocele; *c.* Collections of blood in joints.
3. *Foreign bodies resulting from the accumulation of unnatural secreted fluids.*
  *a.* Lymphatic swellings; *b.* Dropsy of joints; *c.* Dropsy of the bursæ mucosæ; *d.* Water in the head, spina bifida; *e.* Water in the chest and empyema; *f.* Dropsy of the pericardium; *g.* Dropsy of the belly; *h.* Dropsy of the ovary; *i.* Hydrocele.
4. *Foreign bodies produced from the concretion of secreted fluids.*

V. DIVISION.—*Diseases which consist in the degeneration of organic parts, or in the production of new structures.*

1. Enlargement of the tongue; 2. Bronchocele; 3. Enlarged clitoris; 4. Warts; 5. Bunions; 6. Horny growths; 7. Bony growths; 8. Fungus of the dura mater; 9. Fatty swellings; 10. Encysted swellings; 11. Cartilaginous bodies in joints; 12. Sarcoma; 13. Medullary fungus; 14. Polyps; 15. Cancer.

VI. DIVISION.—*Loss of organic parts.*

1. *Organic replacement of already lost parts*, especially of the face, according to the Tagliacozian and Indian methods.
2. *Mechanical replacement:* Application of artificial limbs, and so on.

VII. DIVISION.—*Superfluity of organic parts.*

VIII. DIVISION.—*Display of the elementary management of surgical operations.*

*General surgical operations:* Bleeding, cupping, application of issues, introduction of setons, amputations, resections, and so on." 6.

As the author admits, many objections may be made to this arrangement. Thus, under the head "of some peculiar kinds of inflammation," we find "Burns." By a burn is commonly understood an injury to a part by the action of fire; inflammation, common not specific, being generally the consequence, but by no means invariably, for life may be destroyed before time is given for any inflammation to be set up. Again, under the head of "Old solutions which do not suppurate," are placed *hare-lip* and *cleft in the soft palate*. But these malformations are not *solutions* at all. They are the result of an arrest of development; consequently, as a continuity of the parts never existed, the defect cannot properly be termed "*a solution.*" We have remarked other imperfections in the Classification equally striking.

The next Chapter contains a historical sketch of surgery, which is extremely brief and meagre. The author makes a division into five periods.

"*First period* . . . to the time of HIPPOCRATES.
*Second period* . . from HIPPOCRATES to GALEN.
*Third period* . . from GALEN to the fifteenth century.
*Fourth period* . . the sixteenth century to the middle of the seventeenth.
*Fifth period* . . . the second half of the seventeenth century to the present time." 5.

The translator has added some particulars in reference to the encouragement given to the pursuit of anatomy in England, which may interest.

"The study of anatomy does not seem to have been so little thought of at this time as generally believed, in proof of which it may be mentioned that Sir EDWARD ARRIS, an Alderman of London, who was also warden in 1642, and master of the Company of Barbers and Surgeons in 1651, founded on the 27th October, 1645, six anatomical lectures, to be publicly read every year between Michaelmas and Christmas, and endowed them with 300*l.*, on condition that the Company should pay for the lectures 20*l.* a-year: subsequently he exchanged this sum for an annuity of 30*l.* charged on his estates, and at a later period redeemed this charge by paying 510*l.* to the Company, which was by them paid over at the dissolution of the Surgeons' Company, and when the latter merged into the College of Surgeons, the same was handed over to them. ARRIS's good example was followed by Mr. JOHN GALE, who, on the 30th June, 1698, founded one anatomy lecture every year, to be called GALE's Anatomy, and endowed it with a rent-charge of 16*l.* a-year out of certain landed property, which was subsequently sold for 432*l.* sterling, and the interest thereon now produces rather more than 20*l.* The two endowments are now consolidated, and the lectures on human Anatomy and Surgery are called ARRIS's and GALE's Lectures." 8.

After giving a bibliographical account of the literature of surgery, which from its length is calculated as much to frighten as to be useful to students, the author enters upon the first Division, which treats of inflammation. It is stated—

"Inflammation always commences with a more or less intense pain; the sensibility of the part is increased, redness soon follows, and blood appears in vessels where previously it had not been observed; the temperature of the part is raised, its functions disturbed, secretion suppressed, (at least at first,) or changed, perspiration diminished, and the part swelled. These appearances are developed, in different proportions, to a higher degree, in which fever (*Febris inflammatoria secunda*) usually becomes connected with them.

"[I apprehend it would be more correct to say that 'inflammation, from its very commencement, is always accompanied with a more or less intense pain,' than to say, with our author, it 'always commences with a more or less intense pain;' inasmuch as, though that by which the patient's attention is first excited, yet it is only an indication of a disturbance set up in the economy, and which, as it becomes greater, renders itself apparent to the eye, most commonly by redness.]—J. F. S." 24.

After having read, in the preceding paragraph but one, "inflammation is that condition of an organized part in which the vital process and plasticity of the blood are unnaturally raised, and *which is manifested by pain*,* redness, increased temperature and swelling," the comment of the translator seems hypercritical.

The following is an excellent description of acute mortification. We know of none superior to it in accuracy and fidelity:—

"Mortification truly consists in the extinction of vascular and nervous activity, in consequence of which partial death ensues. This transition is to be feared in unusually severe and quickly developed inflammations with well marked general symptoms in young powerful subjects, and after the operation of severe injuries; in persons with the general appearance of weakness, if the redness of the inflamed part be bluish, of a dirty yellow, the pain slight, and if it be accompanied with typhus. If the pain quickly increase to a great degree, the inflammatory swelling be hard, dry, and very tense, the heat intolerable, the skin dark red, often brownish, the fever extraordinarily severe, and no appearances ensue which lead to the hope of the inflammation terminating in suppuration, then the signs of incipient exhaustion become manifest. The acute pain becomes dull, aching, stretching; there is still indeed circulation, but its current gets slower and slower, and at last stops altogether. The redness therefore becomes deeper, more dusky, and further extended; the warmth diminishes, the swelling, at first hard and tense, becomes soft, doughy, œdematous, the cuticle rises in blisters, containing a dark-coloured brownish fluid. In this condition the part has not yet lost all its sensibility and warmth; the vital activity may therefore be re-awakened and reparation effected. The pulse is small, quick, and loses all fulness and hardness; the patient is depressed, is uneasy, has a languid countenance, cold sweats, dry, dirty tongue, unquenchable thirst, frequently burning hot skin; the features at the same time become pinched, and the urine is thick. When exhaustion of the living activity and fully developed mortification takes place, then the pain ceases entirely, the colour of the part becomes blue, ash gray, or even black, the bone assumes a light white, dirty yellowish, or even black spotted appearance. By the decomposition of the parts still covered with skin, and the evolution of the

* The italics are our own.

gree of mortification an emphysematous swelling is produced, the part becomes quite cold, and the general appearances of exhaustion are present in a higher degree, the mortification either spreads further, and death ensues from exhaustion, or on the confines of the slough is produced a bright redness, suppuration, and by the operation of the absorbing vessels a groove, becoming deeper and deeper, by which the slough is thrown off." 54.

The author has very properly briefly noticed the characters of inflammation as modified in the different tissues—in the skin, cellular tissue, glands, mucous membranes, &c.—in all of which parts he gives a slight sketch of the effects of the disease. We extract the following :—

"Inflammation of the coats of *Arteries* is either generally diffused, with violent pulsation of the heart and arteries and high fever; or it is confined to one spot, when the symptoms are commonly obscure. The acute *partial* inflammation of arteries commonly runs into adhesion; the *chronic*, which mostly depends on diseases with little power, into thickening, loosening, ulceration, deposition of calcareous masses, whence commonly results the origin of aneurisms." 74.

To this concise account of arteritis the translator has added notes, closely printed in small type, extending throughout three entire pages, in which he has quoted the observations, valuable we admit, of Bouillaud and Hodgson, and has also minutely detailed a case, furnished him by a friend, in which there is a daily report of the symptoms. The reader will perceive that we were fully justified in our remark that, the author's protracted additions materially alter the character of the original work. This remark equally applies to the next subject, inflammation of the veins, which is dispatched in the text in eight lines, but is followed by more than three pages of additional notes and observations.

On the subject of the treatment of abscess it is stated;—"Only in small abscesses just beneath the skin, and in those in glandular structures may the opening be left to nature."

Mr. South rightly observes—"This is not good practice; abscesses just beneath the skin should always be punctured early, as otherwise there is great risk of sloughing of the integument and the formation of an ugly scar. Neither should abscesses in glands be left to burst, which is often a very tedious process, a the capsule of the gland does not readily ulcerate, and will not till the whole, or nearly the whole, gland is destroyed; a large cavity is thus formed, which is generally very difficult to heal, as it assumes oftentimes a fistulous character. It is therefore always best to puncture a glandular abscess as soon as the capsule and the skin have become adherent, and the angry appearance of the latter indicates its disposition to ulcerate. But it is not unfrequently advisable to open such abscesses before the skin reddens, or even before it is adherent; for, in scrofulous and chronic abscesses, there is often little and sometimes no redness of the skin, and yet, the collection of pus increasing, the skin becomes stretched beyond endurance, and sloughing ensues."

Particular directions are given as to the modes of opening abscesses by cutting instruments, by escharotics and by seton. The two latter are obsolete in this country, and are very properly condemned by the translator, and, as the have already noticed, the necessity for cautions of this nature renders we book less fitted for the hands of students.

The following passage affords a good illustration of the succinct manner in which the author treats practical subjects:—

"Gangrene from pressure by lying is to be guarded against by suitable preparation of the bed, by lying on a mattress instead of a feather bed, by proper cleanliness, frequent change of the body-linen and sheets, repeated alteration of position, by putting doe-skin beneath the patient, by frequent washing the compressed parts with cold water, lead wash and camphorated spirit. If the part have become red, it must be laid on a hollow formed by introduction of ring-shaped pads, little bolsters of horsehair, cleft mattresses, and afterwards compresses moistened with lead wash, vinegar, or Theden's arquebusade water must be applied, or the part must frequently be smeared with an ointment of white of egg and camphor beaten to a cream. When ulcerative absorption has occurred, softening poultices, ointment of oxide of zinc, or of lead, with opium or camphor, should be applied, and, if the ulceration be spreading and deep, aromatic poultices. If actual gangrene be present, then the ordinary treatment for gangrene must be employed. Of course the treatment of the patient's health should be guided by the state of the disease." 96.

The directions here given for obviating the inconvenience and for the treatment of bed-sores would be complete if they included air-cushions and the water-bed. It is probable that Dr. Arnott's valuable invention may not be known in Germany, but we are surprised that Mr. South should have omitted all notice of it. A note mentioning the nature of "Theden's arquebusade water" would also have been useful.

The Chapter on Burns is a good one. Chelius describes four degrees, which we much prefer to Dupuytren's more minute division into six.

"The *first degree* of burn, arising from hot vapour, from the momentary or lengthened touch of a more or less hot body, produces a bright uncircumscribed redness of the skin, as in erysipelas, which for the moment disappears on pressure of the finger, without swelling, and is accompanied only with increased turgescences of the skin and a little pain. Febrile action only sets in if this degree of burn be much spread and in sensitive persons. The redness of the skin either disappears after some hours or days, when the cuticle scales off.

"In the *second degree*, which is most commonly produced by hot fluids, the cuticle rises either at once or gradually into larger or smaller blisters, filled with clear or yellowish fluid, the redness and swelling of the skin is more distinct; the pain severe, burning; and, according to the degree of these appearances and the extent of the burn, do febrile symptoms set in. These blisters either shrivel together and dry, the fluid being absorbed and the skin thrown off, or, if they burst and are opened, the fluid is discharged, the blister falls together, dries, and after some days either a new cuticle is produced or the exposed part suppurates. The healing leaves no scar.

"The *third degree* of burn is usually produced by the flame of fire or by the lengthened touch of hot bodies, especially of hot fluids, and is characterized by gray, yellowish, or brown spots, which are thin and soft, insensible to light pressure, but are painful if the pressure be increased; at the same time generally appear blisters full of brownish or bloody fluid; the surrounding parts are very red and much swollen. The general re-action corresponds to the degree of the inflammation. After six or eight days, and frequently later, the remains of the destroyed cuticle and mucous net are thrown off, and the cure is effected by granulations and the formation of a white glossy scar.

"In the *fourth degree* of burn the destruction penetrates either through the entire thickness of the skin and cellular tissue, or deeper into and through the muscles to the bone, or the whole part is destroyed and charred. This degree is produced by long contact with fire, red hot or molten metals, boiling fluids. The

sloughs differ in thickness, are completely insensible; soft, gray or yellow if produced by hot fluids; brown or black, dry, hard, and sounding when struck, if caused by fire or dry hot bodies. In the immediate neighbourhood of these sloughs the skin is drawn into radiating folds; the surrounding parts are extremely red and swollen, very painful, and frequently beset with blisters. The slough is thrown off by the suppuration which takes place around it, and a more or less deep suppurating space is produced, which commonly has a much larger extent than the slough, because in consequence of the severe inflammation its immediate belt is destroyed by gangrene. The granulations most usually are developed very quickly and luxuriantly, the edges quickly draw together, and shapeless, hard, contracted tough scars are produced, whereby the direction and motion of the part is often changed and impeded, and the latter even perfectly destroyed. After the throwing off of a part which has been entirely charred, a more or less uneven stump is produced." 111.

The following is an excellent account of the constitutional effects of Burns:—

"More or less severe symptoms ensue according to the different degree and extent of the burn, according to the importance of the burnt part, and the constitution of the patient, and not merely does the degree, but also the extent of the burn, determine its danger. In the first two degrees, the inflammation is easily resolved, and only if it effects a large extent of the body, and still more in the higher degrees, does febrile reaction set in, when, on account of the disturbed functions of the skin and the changed relations between the external and the internal skin, the mucous membrane of the intestines is quickly affected, and uneasiness, loss of sleep, red dry tongue, nausea, vomiting, high nervous excitement, delirium, and the like come on. From the severity of the pain cramps and convulsions occur, especially in sensitive persons. In extensive burns, death may ensue rather suddenly from the greatness of the pain, from the quick stopping of the functions of the skin, from the excessive flow of blood to the internal parts where on dissection either no internal derangement is seen, or where a gorging of the brain and mucous membranes with blood and even effusion into their cavities is observed; or from the severity of the fever, especially if accompanied with inflammation of internal parts, of the stomach, intestines, brain, more rarely of the lungs and of the pericardium; or from the very copious and continued suppuration, by which the powers are exhausted. The production of unsightly hard scars, or the growing together of neighbouring parts, may cause disturbance or complete stoppage of their functions." 111.

In his usual concise manner the author has dismissed the subject of the Treatment of Burns in little more than half a page. The translator, however, compensates for this brevity by giving eleven pages of additional notes, fully detailing the views of Kentish and many others on the treatment of these injuries. We fully agree with Mr. South in the following remarks:—

"It is matter of dispute among surgeons, as to the propriety of administering opiates or other sedatives, an objection being made that the action of the opium interferes with the symptoms, so that it is impossible to determine whether the brain be affected by the irritation of the injury or by the action of the opium. I do not think this is matter of much consequence; but I am quite certain that soothing the patient's sufferings, and dulling his nervous irritability, are most important indications in the constitutional treatment. Therefore I invariably prescribe laudanum for an adult or syrup of poppies for a child, if there be any disposition to restlessness; and, if it continue, the opiate is repeated a few hours after. The advantage derived from sleep, even for a short period, is very great, and cannot be

too strongly recommended, as during that time the stinging of the burn diminishes, and the patient suffers less. If sleep as might be deficient or much disturbed, I think it better to give laudanum in sufficient quantity to procure it; in less quantity it irritates and is hurtful, and this may be continued for some time, as may be found necessary." 120.

We consider it an omission that the translator has neglected to notice the acute ulcer of the duodenum which Mr. Curling has shown to be of common occurrence after severe burns, and is often the immediate cause of a fatal termination by causing diarrhœa or hæmorrhage into the bowels. Long notes are given on the subject of scars, and the treatment of contractions after the healing of burns, and the translator gives the minute particulars of a case operated on by him according to Earle's method, but in which he admits that success was by no means decisive, though the case was proceeding satisfactorily.

In the chapters on Frostbite, Boil, and Carbuncle, we find nothing remarkable

The third section treats of Inflammation in certain special organs. We think the arrangement by which inflammation of the various organs is described separately from the other affections of the part, a faulty one. This head embraces so many subjects, that we can only find space to allude to a few points of novelty and interest. Women who do not suckle, or who wean their children early, are recommended, in order to prevent inflammation of the breast, to "use a strict diet, encourage perspiration, take purgatives; *apply cotton fumigated with sugar to the breasts, rub the nipples often with spittle*, and support the breasts." The directions given by us in italics, our readers will think better suited for old fashioned nurses than for the students of 1845. In reference to the disputed point of practice, the opening of breast-abscess, we entirely concur in the following views which are well-expressed by Mr. South:—

"Chelius's recommendation of leaving 'the opening of the abscess to Nature' must on no account be followed, as its certain result is, according to his own observation, the occurrence of 'many openings at different parts' of the breast, and the necessary production of very unsightly scars, which most grievously annoy the patient and her friends, and deservedly discredit the reputation of the medical attendant. The abscess is *always to be punctured freely, so soon as fluctuation can be distinctly felt*, and whilst the walls of the abscess are still thick. The almost immediate ease gained by relieving the tension of the fibrous covering of the breast gland, is the first advantage obtained: the burrowing of pus is also prevented, and thereby a smaller cavity left, when emptied, to fall together and fill up by granulation; and, most important of all, the sloughing of the skin almost to a certainty precluded. No squeezing or kneading of the breast to evacuate the pus, as often most improperly practised, is to be on any account resorted to, the agony thereby produced is extreme, the benefit gained nothing, for the aperture made should be sufficiently large to permit the free escape of the matter, which, having been allowed to flow as long as it will, a strip of lint, oiled, is to be introduced between the lips of the wound to prevent their union, and a light bread poultice, or warm fomenting flannels laid over the breast and repeatedly renewed. In the course of a few hours the lint should be withdrawn, and the wound generally remains sufficiently open to permit the continual flow of the pus. If, as not unfrequently happens, clots of adhesive matter, or dead cellular tissue, block up the opening so that the matter does not readily escape, they may be gently removed if they protrude between the lips of the

wound. But, if not, and the pus be still retained, a grooved director should be very gently introduced into the cavity of the abscess, and by its canal the discharge will pass; but no pressure is on any account to be used. If a second, or even a third, abscess point, or if the same abscess point at a different part of the breast, these are severally to be opened as they occur, the prime object of the treatment being to remove every chance of sloughing and scar of the skin. Oftentimes the first discharge is extremely fetid, more particularly if the opening of the abscess have been delayed, or if it have been left to burst spontaneously, and in these cases the constitutional excitement is frequently very great, amounting even to delirium. The character of the suppuration, however, usually soon becomes healthy, and the febrile symptoms speedily subside. Chelius's objections to passing tents or tubes into the fistulous passages, which generally alone occur from leaving the abscess to burst of itself, are well founded; they never ought to be employed. Neither should Langenbeck's plan of introducing ligatures be for a moment thought of; it is very bad practice.

"Fistulous passages almost invariably occur from the pus not having a convenient and complete discharge. Sometimes gentle, well-applied pressure along the course of the sinuous passage may be sufficient to produce inflammation and adhesion of its walls; but, if not, or if the patient cannot, as sometimes happens, bear the necessary pressure, then a probe should be introduced, and its extremity cut down upon through the skin at that part of the sinus which is most depending. Usually in a few days the old aperture heals, the pus is discharged by the new wound, and soon a cure is effected. As a general rule, injections of these adventitious canals are not advisable; but, when the opening is at the most depending part, and they can be employed simply to wash out the canal and slightly irritate it, but without being retained, which will often create more inconvenience than that to be got rid of, then they may be used with discretion. A mild solution of sulphate of zinc is, I believe, the best injection." 152.

In the notes appended to the chapter on Inflammation of the Urethra, the translator observes, "I once saw a case, under my colleague Mackmurdo's care, in which there was enormous extravasation of blood, from bursting of some vessel in the penis, during the act of coition; and the result of which was, the penis especially and the perinæum were greatly distended, and he was unable to pass his urine without extreme pain, in consequence of which a catheter was introduced. In the course of two or three days, extravasation of urine ensued, and the bladder was punctured through the rectum. Considerable sloughing, not only in the perinæum, but also up into the groins, took place, into which incisions were made, as needed, and he ultimately, though slowly, recovered."

Cases of obstinate erection from extravasation of blood in the corpus spongiosum occurring under the violent excitement of coition have not been much noticed by writers. We have witnessed some cases of it, and have found the priapism subside gradually as the blood became absorbed. We recollect some time back reading a case in which a surgeon thought it necessary to cut into the corpus spongiosum to relieve the extreme tension of the penis, and the patient ever afterwards lost the power of erection.

On the subject of gonorrhœa, we observe many erroneous views in the text, which the translator does not omit to correct in his notes. We suppose few of our friends have met with the following affection:—

"*Gonorrhœa of the Nose* sometimes occurs during gonorrhœa of the urethra, or whilst there is an enlargement of the testicle from the same cause. The

Schneiderian membrane is tender over its whole surface, but not painful; is of a deep red colour, but not ulcerated; and there is a free discharge similar to that of clap.

"This disease was first noticed by Benjamin Bell, and he mentions two cases of it: in the first, 'the discharge from the urethra lessened before the testes became inflamed, and, on this taking place from the nose, it ceased entirely.' It was treated with an astringent lotion and the insertion of sponge moistened in it up the nose, and cured in a few days. In the second case, 'the discharge took place during the continuance, and had existed many years, and, although it had frequently become less, it never disappeared entirely.' Various attempts at its cure were made without success, 'and, though no other symptom appeared, he was advised to undergo a course of mercury; but no advantage ensued.' (pp. 29, 30.)—J. F. S." 177.

In treating of Inflammation of the Testicle, the author states that it may be a symptom of general syphilis, but he draws no clear distinction between the ordinary form of acute orchitis, and the peculiar chronic inflammatory enlargement which occurs as a secondary, or rather tertiary, symptom of the venereal disease. After giving the opinions of Sir Astley Cooper and Ricord, in addition to that of Chelius, respecting this affection, we are surprised to find the translator remark, "notwithstanding these high authorities, I must confess I have great doubt as to the swelling of the testicle depending on a syphilitic cause." We thought that the existence of this form of the disease was a fact in pathology too well established to admit of being questioned.

We observe many obsolete opinions and objectionable remarks in this Chapter. Take for instance the following—"Not unfrequently, as a symptom of general venereal disease, a hard swelling of the testicle is slowly produced, which may generally be dispersed by a regular mercurial treatment, or by the proper exhibition of cubebs." It is too obvious that the author confounds the two distinct affections, gonorrhœal and syphilitic orchitis. Again, it is stated, "The hardening of the testicle from one gonorrhœa is not unfrequently dispersed by a fresh gonorrhœa; hence the proposition of passing bougies smeared with red precipitate ointment (not with gonorrhœal mucus) to excite fresh inflammation of the urethra." We have here both bad pathology and bad practice passed over without comment from the translator.

The heading of the next Chapter is "Inflammation of the Lumbar Muscles," and our readers will be surprised to learn that, under this title, a description is given of Psoas or Lumbar Abscess. The history of the disease given by Chelius is extremely meagre, but Mr. South makes amends for the imperfect description of the author by collating the views of the best writers on the affection.

Inflammation of the nail-joint, or Whitlow, occupies thirteen pages of the work, but we find nothing particularly calling for remark.

We here conclude our review of the two first parts of Chelius's System of Surgery. The extracts which we have given will enable our readers to form an opinion of the character of the work. The original German is rendered in good readable English, and much pains have been taken by Mr. South in collating the views and observations of the best writers on the subjects imperfectly treated of in the text. And although we have not been able to give our unqualified approbation to the work, we can

recommend it as containing a large amount of valuable information on the most important subjects of surgery.

We will conclude with a hint, which those interested in the work will find well worthy of attention. Be punctual in the issue of the parts at the periods promised in the advertisement. There have been of late such flagrant breeches of faith in respect to books published in parts, that the public are naturally suspicious of them, and disinclined to make an investment they may have good reason to repent.

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I. Lectures on Subjects connected with Clinical Medicine, comprising Diseases of the Heart. By *P. M. Latham*, M.D., Physician Extraordinary to the Queen, and late Physician to St. Bartholomew's Hospital. Vol. I. pp. 374. London, 1845. Longman and Co.

II. The Diagnosis, Prevention, and Treatment of Diseases of the Heart, and of Aneurism, with Observations on Rheumatism. By *J. J. Furnivall*, M.D., late Physician to the General Infirmary at Hertford, &c., &c. 8vo. pp. 216. London, 1845. Churchill.

The present volume will unquestionably add to Dr. Latham's reputation as an acute observer and a vigorous describer of disease. His is not the character of one who loves to follow in the steps of another, and seeks to uphold his own views by appealing to the experience of any who have gone before him. He looks with his own eyes, and writes too with his own pen, in a bold and firm style that admits of no ambiguity, and is legible by all. Our readers may be aware that he published a volume "On Subjects connected with Clinical Medicine," in 1836—a review of which will be found in the number of this Journal for July of that year—that was well received by the profession, and that at once stamped its author as one of the ablest practical writers of the day. His intention was to have followed it up by other volumes on the same subject; but ill-health, we regret to find, and other causes came in the way, and have prevented him from fulfilling it until the present time.

The series of Lectures now before us is devoted almost exclusively to the pathology of the Heart, or rather to the history and treatment of those two most important diseases—the parent source of most others—of this organ, Endocarditis and Pericarditis. Our author prefaces his description of them with some excellent observations on the Auscultation of the Heart, in health and in disease. The first four lectures contain a capital summary of all that is necessary or really useful to know on this branch of diagnosis, and we can with confidence recommend them as forming one of the best text-books for the guidance of men engaged in general practice.

As a matter of course, it is only to such passages as contain something

new, or which place what is already known in a somewhat novel light, that we shall at present direct the reader's attention.

The normal situation of the heart's impulse is usually described to be "between the cartilages of the 5th and 6th left ribs, at a point about two inches below the nipple, and an inch on its sternal side." (Hope.) But the exact spot, it should be remembered, varies somewhat in the same person, according to the position in which the patient is placed.

"The same man, according to the varying postures of his body, will alter the place and extent of this impulse. He stands up, and makes it felt just where the apex strikes the chest, at a point between the fifth and sixth ribs, and not beyond it. He leans forward, and makes it felt both at this point and a little above it, and in the direction of the sternum. He reclines upon his back, and renders it almost or altogether imperceptible anywhere. He turns on his left side, and renders it more perceptible than ever, and in a somewhat larger and different space between the fifth and sixth ribs, and from thence more towards the mamma than the sternum. Again he turns on his right side, and again he renders the impulse almost or altogether imperceptible." P. 14.

The *præcordial* (as Dr. Latham calls it,) or—to prevent misconception, from this term having hitherto been generally used in a somewhat different sense—the *Cardiac, region* in the healthy state may be tolerably well defined by describing a circle two inches in diameter, from a point in the cartilage of the fifth left rib, midway between its sternal and costal ends. "In the space indicated, most practical men would (I think) be ready to admit that percussion conveys to the ear a sense rather of less resonance than of positive dulness. The fact is, if the percussion used be but of moderate force, you must listen attentively to make sure that the resonance is really less here than elsewhere. It is only when the percussion used is of a force somewhat painful to the patient, that the ear begins to acknowledge a positive dulness."

It should be remembered that the dulness of the sound thus elicited is always more distinct in the erect than in the reclining position, and at the time of expiration than that of inspiration.

No part of Dr. Latham's description pleases us better than his account of the abnormal sounds, which so frequently accompany the movements of the heart. Let us briefly notice it. In the first place, he recommends that all these irregular sounds should be called *murmurs*, to distinguish them from the healthy sounds or natural tictac of the organ; and inasmuch as they are always produced by certain morbid states, either of the cavities of the heart or of its outer surface, he proposes to divide them into such as are *endocardial* and those which are *exocardial*. To the first belong all the murmurs that accompany either the first or the second cardiac sounds, and which are usually described as being of a blowing, sawing, filing, or rasping character. The second includes all the rubbing, rustling, or crumpling noises or bruits, which have been noticed by different writers in pericardial inflammation, whether this be of an acute or of a chronic character.

The one set accompanies or, it may be, disguises and supersedes the natural sounds of the heart; the other set is superadded to, and is quite independent of, them. The former always seem to the ear to be more distant or deeply-seated than the latter; they are usually, also, shorter in

their duration. The *exocardial* murmurs are not so fluctuating and liable to change within a brief space of time as the *endocardial;* they may indeed change from one day to another; but rarely, if ever, from hour to hour, as may happen in the case of the latter.

We need scarcely say that persistent Endocardial murmurs are almost always indicative of a morbid state of the valves—generally either the mitral or the aortic; for the valves on the right side of the heart are very rarely diseased. Beyond this amount of information, our diagnosis must remain in most instances obscure and uncertain; except indeed when the murmur is invariably synchronous with the *diastole;* for then it very generally proceeds from the aorta, and is a sound of regurgitation. When the murmur is *systolic*, it may come either from the aortic or from the mitral valve: in the latter case, it is caused by the reflux of blood from the ventricle into the auricle. Some degree of assistance to our diagnosis may sometimes be obtained by attending to the *direction*, in which the valvular murmur seems to be prolonged from the point whence it proceeds: but this can often not be done with any degree of certainty. After admitting that it is scarcely possible to distinguish a mitral from an aortic murmur by any difference in their primitive seat or locality—all the valves being clustered together in so small a space, that the mouth of a common stethoscope must cover them—our able guide observes:—

"But suppose we raise our ear, or the stethoscope, from this exact spot, and shift it an inch or two higher or an inch or two lower. Higher we may hear the endocardial murmur still, and lower we may lose it altogether. Or higher we may lose it altogether, and lower we may hear it still. Or both higher and lower we may still distinctly hear it. By this procedure we are following the endocardial murmur in the direction it takes after it leaves the orifice from which it is propagated, and we find how various the direction is, upwards in one case, downwards in another, and both upwards and downwards in a third. But still it is the orifice, from which it is propagated, that gives the murmur its particular direction; and this (it is said) may be taken for a general fact.

"Accordingly, when the endocardial murmur is conveyed in an upward direction, even above the basis of the heart, and still along the course of the aorta, and further still, as sometimes happens, along the subclavian and carotid arteries, the aortic orifice is its point of departure, and the valve, there situated, is the valve diseased. When it is conveyed in a downward direction, and to the apex of the heart, the auriculo-ventricular orifice is its point of departure, and the valve, there situated, is the valve diseased. And when it is conveyed both in an upward and downward direction, both in the course of the aorta, and to the apex of the heart, then it has two points of departure, and both the aortic and the mitral valves are diseased." 43.

On this, however, and some other points connected with the diagnosis of valvular disease, Dr. Latham does not hesitate to acknowledge that, at the present moment, "he is less peremptory about the certainty of their application than he was a year or two ago." Such is the uncertainty that still hangs over much of cardiac semeiology. Let not the reader therefore be misled by the confident asseverations of not a few of the auscultatory writers of late years.

It is too generally believed that, in cases of valvular disease, the loudness of the abnormal murmurs is proportionate to, and may be regarded as a test of, the amount of contraction of the cardiac orifice or

orifices affected. This opinion must be received with some degree of reservation.

"The truth is, that the murmur becomes louder as the disease and the impediment increases only *up to a certain point*, and then, that it becomes less and less loud as they go on to increase beyond this point. Thus the disease and the impediment still increasing may, and sometimes do, reach a point at which the endocardial murmur ceases thenceforth, and altogether, as long as life remains.

"Two individuals of unsound heart died within a few days of each other. I witnessed the symptoms of their disease during life, and after death I saw what that disease actually was. In both the right ventricle was dilated, and the left was dilated and hypertrophied; and in both the mitral valve and the aortic valve were diseased. But the valve disease, and the impediment resulting from it were far greater in one case than in the other. In the one the auriculo-ventricular orifice was so narrowed as only just to admit the little finger, and the aortic orifice was only just not closed. In the other there remained a tolerably free space for the passage of blood through both orifices.

"Now in the first case during life there was no endocardial murmur at all; while during life in the second there was a loud bellows-murmur audible in the whole præcordial region, and far on either side of it, and beyond it upwards in the course of the aorta.

"All this seems to admit of easy explanation. When endocardial murmurs result from diseased valves, there are two agents engaged in producing them, viz., the mechanical obstacle which the blood encounters, and the blood itself. It is from unusual vibrations among the particles of the blood that the unusual sound immediately proceeds; but it is the obstacle which sets the conflict agoing. Now the sound must be in proportion to the vibration; and the vibration is in proportion to the amount of the obstacle and the quantity of blood and the rate at which it circulates taken together. Thus the endocardial murmur becomes louder and louder while the valvular disease is upon the increase, as long as the heart by its increasing thickness is still able to force a large current of blood through a moderately contracted orifice. But the endocardial murmur becomes fainter and fainter, and at length ceases altogether, as the valvular disease, by its further increase, goes on still to narrow the orifice, and the ventricle with all its increasing thickness can only force the blood through it in a more and more slender stream." 50.

Dr. Latham attaches but little importance to the particular *kind* or description of murmur that may chance to be heard in any case of cardiac disease. The catalogue of blowing, filing, sawing, rasping, cooing, &c. sounds is more ingenious than useful. "Upon the whole, my persuasion is," says he "that no practical good has come from curiously naming, and noting, and multiplying endocardial murmurs. The *mere* murmur can only tell me whether it proceed from the inside or from the outside of the heart. For more than this I cannot trust it. But in telling me this, it tells that which I have no possible means of knowing without it."

Every practical man is aware that certain endocardial murmurs may exist without the presence of any organic disease of the valves or other parts of the Heart. A loud bellows-murmur is a very common phenomenon in various hæmorrhagic, hysterical, and chlorotic maladies. In children, too, it is not an unfrequent occurrence, whenever the force of the circulation is much increased. Any impediment also to the free action of the heart, although the organ itself is perfectly sound in structure, is apt to give rise to various endocardial murmurs. This is often the case

in cases of deformity of the chest, when the heart is either displaced, or hemmed in and compressed. If the patient be young, and the ribs yielding, the mere pressure of the end of the stethoscope, pretty firmly applied, will sometimes suffice to induce a bellows-murmur, which is not perceptible when the pressure is removed. It is therefore necessary, under such circumstances, to be on our guard, lest, by our own awkwardness, we aggravate, if we do not actually cause, a sound that may be supposed to be symptomatic of disease.

"The chicken-breast, which scarcely passes for a deformity, is often sufficient greatly to alter the relation of the heart to the walls of the chest. It often thrusts it forward, and brings its whole anterior surface in contact with the sternum and ribs. Hence in such cases the question, whether the heart be sound or unsound, becomes puzzling enough. Sound or unsound, its impulse is to be felt and seen in all the space at which it lies in contact with the chest, and the same space is full to percussion. Extensive præcordial impulse and extensive præcordial dulness are the very signs of hypertrophy; and if to these be superadded the endocardial murmur, you have the complete signs denoting the commonest form of complex unsoundness which the heart is apt to undergo, viz., hypertrophy with valvular disease. But beware, now especially, beware, of creating the endocardial murmur by the application of the ear or the stethoscope to the præcordial region. Nothing is easier. I have done so frequently in such cases by way of experiment." 64.

Dr. Latham mentions a circumstance touching the history of Phthisis, that—if the accuracy of the remark be confirmed by the experience of other medical men—is of the highest importance, and therefore requires to be generally known. To prevent all mistake, we shall give the description in his own words:—

"Fancy a line drawn from the left side of the sternum along the upper edge of the second costal cartilage, and continued an inch along the second rib; and another line drawn from the sternum along the lower edge of the third costal cartilage, and continued an inch along the third rib. Between these two lines a space is included, in the whole or in part of which a murmur is often audible coincident with the systole of the heart, when no such murmur can be perceived either in the præcordial region, or in the course of the aorta, or in the carotids, or in any part of the arterial system, but here and here only. It is a gentle bellows-murmur, quite obvious to the ear, and unmistakable in its character.

"Of such a murmur, often audible in this situation exclusively, I am certain as a matter of fact, and certain too of its very remarkable accompaniments. I have witnessed it either in those who were undeniably consumptive, or in those who were too justly suspected of being so. I cannot say in what proportion of the phthisical it occurs; but I am continually meeting with it." 66.

He cannot offer any satisfactory, or even plausible, explanation of the phenomenon. Some one may conjecture that it may be seated in the pulmonary artery.

We must not dismiss this part of our subject without reminding the reader that Incipient Valvular Disease of the Heart may exist without there being any permanent endocardial murmur; for this may be perceptible, only when the circulation is somewhat quickened. Neither the cardiac impulse nor the sounds may be at all altered, as long as the person is quiescent; but after motion, the one will generally be found to be stronger, and the other to be more or less distinctly modified, if any serious lesion of the valves be present. Hence, whenever we

have reason to suspect from the general symptoms the existence of cardiac disease, the utility of making the patient walk once or twice briskly round the room—or, what is still better, go up a flight of stairs rather quickly—and of then examining the state of the heart's actions and sounds, should there be any grounds for ambiguity in the diagnosis. We proceed now to particulars.

*Endocarditis.*—It is well known that it was Dr. Latham who first pointed out (in 1826) that, whenever the heart is affected in acute Rheumatism, a sound different from the sound of health is always heard to accompany its contractions. His idea then, and for some time afterwards, was, that this abnormal sound was somehow or other connected with an inflammation of the *pericardium:* in course of time, however, he began to suspect that it proceeded from the internal lining of the heart. "But for years the practice of this great hospital did not afford me a single opportunity of resolving my doubt, or of confirming my conjecture. For of that disease of the heart, which, coming on during acute rheumatism, is characterised by the bellows-murmur, no patient of mine ever died, and I could learn nothing about it from dissection. But what my own experience would not furnish, M. Bouillaud's has supplied. Many have died during the active progress of this disease under his care, and dissection has found it to be inflammation of the endocardium. Thus we are indebted to M. Bouillaud for our first knowledge of this important fact."*

Nearly about the same time (1836,) the attention of the profession was directed, by Drs. Watson and Stokes, more especially, to the friction (or *exocardial*) murmurs, as characteristic of pericardial inflammation. These sounds always suggest the idea of attrition, as if produced by two surfaces moving to and fro upon each other; whereas, on the other hand, the *endocardial* as invariably suggest the idea of a blowing or rushing, or whizzing noise. The former are caused by the surfaces of the pericardium becoming either unusually dry, or rough and irregular by the deposit of lymph; the latter by the narrowing of the orifices through which the blood has to pass from one cavity to another. When both descriptions of murmur are found to be present in a case of acute rheumatism, we have the strongest presumption for believing that there is an inflammatory state both of the Pericardium and the Endocardium. We are not inclined to go quite so far as Dr. Latham does, and assert that the bellows-murmur coming on in the course of that disease is a sure sign of endocarditis;" because we know that this murmur is apt to occur, especially in persons of an irritable temperament, after copious depletions of blood or any great lowering of the system. Still, it is a most valuable symptom, and it therefore becomes a matter of first-rate importance, that its early development should be ascertained. The following emphatic remarks will arrest the attention of every one who reads them:—

"In endocarditis, besides the endocardial murmur, there may be other symptoms present directly referable to the heart, or there may not. There may or

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* The reader will find a succinct account of M. Bouillaud's opinions in our review of his work.

may not be pain. There may or may not be an excessive impulse, or an intermittent, irregular, or fluttering action of the heart. But the fact of endocarditis is not rendered more or less certain by their presence or absence.

"There may be both pain and palpitation; yet endocarditis cannot be surely inferred to exist, unless there be the endocardial murmur withal. There may be neither pain nor palpitation, yet endocarditis cannot be inferred not to exist, if the endocardial murmur alone be present.

"Seeing, then, that the endocardial murmur alone can determine the existence of endocarditis, you are required to search after it in every case of acute rheumatism. I say emphatically *to search after it*, because it is one of those signs which must always be sought before it can be found. It does not intrude itself upon our notice like palpitation, or an irregular pulse. The patient does not draw our attention to it as he does to pain. The physician must make it out entirely for himself. And indeed it is infinitely important that he should have the earliest possible notice of it with a view to the earliest possible application of the remedy." 105.

The occurrence of the Endocardial murmur, in cases of rheumatism, is often preceded, for one or two days, by a very perceptible change or modification of the first or systolic sound of the heart: this is generally much longer and rougher than in a state of health. In the majority of instances, however, the change from the natural sound to the endocardial murmur takes place without any such notice or prelude. The exact seat of the murmur, and the direction in which it seems to be prolonged, must be taken into account to enable us to determine which of the orifices of the heart is (most probably) affected.

With respect to the rational symptoms of the earlier stages of Endocarditis—pain in the præcordia, increased perhaps upon a deep inspiration and by pressure, dyspnœa, a sense of anguish about the region of the heart, an increase in the force of its impulse, and an irregular, perhaps intermittent pulse—it should be borne in mind, that in some cases they are sufficiently well marked before any trace of endocardial murmur can be heard; while in other cases the auscultatory precede the development, or at least the distinct announcement, of the rational symptoms. The following remarks, on the value of *pain* as a diagnostic sign, well merit the attention of the practical man:—

"But of all symptoms mere pain is the most inconstant and uncertain, whatever be the disease. It is so in pericarditis. It is present in one case, and absent in another strangely and unaccountably. I have known much pain, when the disease has been of little severity, of short duration, and of easy cure: and I have known the severest pericarditis pass through all its stages without pain. All other symptoms have been present to mark its reality and its progress: the murmur and the præcordial dulness, and the fluttering heart, and the respiratory anguish. And sometimes the patient has died, and sometimes he has escaped by a tardy and precarious convalescence. But from first to last there has absolutely been no pain.

"Do not be surprised at this. Pleurisy may exist without pain; even acute, rapid, pus-effusing pleurisy. Peritonitis may exist without pain; even acute, rapid, pus-effusing peritonitis. And so, too, if in pericarditis there is sometimes no pain, it fortunately happens that there are other signs by which we can fix our diagnosis of the disease equally well without it." 142.

*Pericarditis.*—As the *bellows-murmur*, when it occurs in a case of acute

Rheumatism, is the pathognomonic auscultatory symptom of Endocarditis, so is the rubbing or *attrition murmur* (heard in the cardiac region) the pathognomonic sign of Pericarditis. The peculiar character of the latter sound differs very much in different cases; hence the variety of similitudes to which it has been compared. It not unfrequently resembles the noise produced by rubbing the hands together, or the cuffs of one's coat upon each other, or two pieces of rough paper; at other times it is like that caused by the crumpling of parchment, or the creaking of shoe-leather, or the churning of milk, &c, &c. As Dr. Latham suggests, it would be much better to discard, or at least not to use generally, any word derived from these supposed resemblances, and to adopt instead the generic application of *exocardial*—intimating thereby that the sound in question proceeds from the external surface of the heart.

Along with this abnormal auscultatory sign, there is very generally associated an increased dulness on percussion, and this too over a greater space than usual. Occasionally—but this is a rare occurrence—the exocardial sound, after having been for two or three days distinctly perceptible, has ceased altogether and perhaps has again returned. Such a circumstance may be owing to water, which had been effused into the bag of the pericardium, becoming absorbed under the influence of the remedies employed. Besides the more important symptoms of an exocardial sound and increased dulness on percussion, there are two other physical signs in pericarditis, mentioned by our author as being "directly referable to the heart, indicating the same conditions of disease, and often found in their company." These are described in the following words:—

"In pericarditis, while the præcordial region is dull to percussion and the exocardial murmur is heard, an undulating motion often becomes visible to the eye in some of the spaces between the cartilages of the ribs on the left side. It has always been either between the cartilages of the second and third ribs, or of the third and fourth, or between both at the same time, that I have seen this motion, and never in any other situation.

"So, too, in pericarditis, while the præcordial region is dull to percussion and the murmur is heard, a vibratory motion often becomes sensible to the touch in some of the spaces between the cartilages of the ribs on the left side. As I never *saw* the undulatory, so I never *felt* the vibratory motion elsewhere than either between the cartilages of the second and third, or of the third and fourth ribs, or between the cartilages of both simultaneously.

"The vibration (I believe) is the more frequent of the two, and often occurs unaccompanied by any visible undulation. But the undulation was never apparent to my eye without my finger being able to detect a sensible vibration at the very same spot." 134.

It is to be remembered that these latter signs are by no means of constant occurrence in Pericarditis; in many cases, neither of them is ever discoverable; and, when they are present, it is never in the early stage of the disease. Moreover, the vibratory movement in certain of the intercostal spaces is occasionally met with in other cardiac maladies; as, for example, in disease of the semilunar valves of the aorta and pulmonary artery.

We now proceed to lay before our readers some valuable statistical data, derived from Dr. Latham's practice at St. Bartholomew's Hospital, to shew

the intimate connection between Endocardial and Pericardial inflammation on the one hand, and the existence of acute Rheumatism on the other.

In the course of five years, from the beginning of 1836 to the end of 1840, there were admitted under our author's care, 136 cases of acute rheumatism. Of these, 75 occurred in males, and 61 in females. Of the 75 males, the heart was affected in 47; and of the 61 females in 43. Now in these 47 cases, the seat of the cardiac disease was as follows: in 30, the endocardium alone was affected; in 3, the pericardium alone; in 7, both membranes were inflamed; and in the remaining 7 the exact seat of the disease was uncertain.

Of the whole number of males, in whom the heart was thus variously affected, only 3 died; and in these 3 cases, both the Endocardium and the Pericardium were affected.

Of the 43 cases of rheumatic heart-complication in females, "the seat of disease was the endocardium alone in 33; the pericardium alone in 4; and both endocardium and pericardium in 4; and the exact seat of the cardiac disease was doubtful in 2.

Of the whole number of females in whom the heart was thus variously affected none died.

Here then we see that, in *two-thirds* of these cases of acute Rheumatism, there was some affection or another (certainly of an inflammatory nature) of the heart. Before the publication of Bouillaud's Researches,* it was universally supposed that it was the pericardium that was generally affected. The fallacy of this opinion is abundantly shown by the data which we have just now given. From them "it appears that Endocarditis occurs nine times in acute rheumatism, for pericarditis once; that simple endocarditis constitutes more than two-thirds of all rheumatic cardiac affections, and simple pericarditis only one-thirteenth; and that pericarditis is more frequently found in combination with endocarditis than alone."

It will be observed that not one of the 63 cases, in which the endocardium alone was affected, proved fatal. From this it might be inferred by some that Endocarditis is any thing but a very formidable malady. But then let it be never forgotten by the practising physician that the disease often leaves behind it, *when seemingly cured*, the rudiments of future mischief; and that the complete cessation of the endocardial murmur occurred in but a small proportion of the cases (17 out of 63) when they left the hospital. As long as this auscultatory phenomenon lasts, we cannot fairly regard the heart as completely restored to a state of health. In the seven cases of simple Pericarditis, life was saved in all; and moreover no trace of exocardial murmur remained, after the convalescence was fairly established. From the circumstance, however, of the continuance, in four of them, either of a certain degree of cardiac uneasiness, or of an increased impulse of the heart, or of some alteration in its natural sounds, it was

* The reader will find tolerably ample reviews of this gentleman's work on Diseases of the Heart, and of his *Nouvelles recherches sur le Rheumatisme articulaire aigu en general, et specialement sur la loi de coincidence de la Pericardite et de l'Endocardite avec cette maladie*, in the Numbers of this Journal for April and July, 1836.

considered highly probable that adhesion, to a greater or less extent, had taken place between the opposite surfaces of the inflamed membrane. If such were the case, there is too much reason to fear that the pericardial adhesion would be the ground-work and "point de depart" of a more serious cardiac lesion at some ulterior period of life.

In the three fatal cases, the auscultatory signs denoting inflammation of the endocardium and pericardium were well-marked, and on both membranes dissection disclosed the recent effects of inflammation. We give the details of the *post-mortem* appearances in one: "the folds of the pericardium were universally adherent, but were easily separated. The connecting lymph was peculiarly vascular over the left ventricle, and being detached, discovered some spots upon the surface of the heart which looked like pus. The endocardium bore marks of inflammation on both sides of the heart. On the tricuspid valve, at a little distance from its free edge, was a spot, one-third of an inch in diameter, pink in the centre, and surrounded with a white elevated border. On the mitral valve were small pearly bodies, about the size of millet seeds, fringing its free edges. The aortic valve was thickened and of a pinkish colour, and displayed upon its surface, a little below its free edges, bodies of the same form and size as those found upon the mitral valve. The general bulk of the heart and the capacity of its cavities were natural, and its muscular substance had the appearance of health."

In one of the other cases, there was not above two or three drachms of fluid in the pericardial sac, which, although invested with curd-like lymph, was not at all adherent; whereas, in the third, there was nearly three ounces of fluid, the pericardium being only partially adherent to the surface of the heart by loose bands of lymph.

It is not easy to determine whether it is the Pericardium or the Endocardium that becomes first inflamed in these compound cases. In one instance, the exocardial and the endocardial murmurs arose *simultaneously* after the patient's admission into the hospital: and in 2, they were found already co-existing at the time of admission. In 4, the endocardial was prior to the exocardial murmur; and, in 4, the exocardial was prior to the endocardial murmur.

Dr. Latham's ninth lecture is devoted to the consideration of a point in the history of acute Rheumatism that has not hitherto met with the attention it deserves. While every physician in the present day knows full well that pericarditis and endocarditis are very common accompaniments of this disease, not many, probably, are aware that inflammation of the lungs—we use this term to comprehend pneumonia, pleuritis, and bronchitis—is also a not unfrequent complication at the same time. Of Dr. L.'s 130 cases of acute rheumatism, the heart was inflamed in 90, or in two-thirds of the whole; while the lungs were inflamed in 24, or 1 in 5¼. These 24 cases consisted of 4 of Bronchitis, 18 of Pneumonia, and 2 of Pleurisy. In all, the pulmonary disease was of a serious character. "In the four instances of bronchitis, the affection was no mere catarrh, but an inflammation largely diffused through both lungs, producing deep oppression and dyspnœa. Of the two pleurisies, one was single and the other double. The single pleurisy produced a large effusion into one side. The double pleurisy

produced a double hydrothorax. Of the 18 instances of pneumonia, in 9 the disease was of one lung, and in 9 it was of both."

Whence this highly dangerous character of the pulmonary disease? From the circumstance, most probably, of its being generally associated with cardiac inflammation. For of the 24 cases, 5 only occurred in the 46 cases of rheumatism in which the heart was unaffected; whereas, of the 90 cases in which the heart was inflamed, the lungs were also inflamed in 19. Again, of these 19 cases, no fewer than 8 of them occurred in patients in whom Endocarditis and Pericarditis existed simultaneously; and, as the number of such patients did not exceed 11 in all, we see how frequently a pulmonary complication is apt to occur under these circumstances. Of the remaining 11 cases, 7 occurred in the 63 cases in which the endocardium alone was affected; and 4 in the 7 cases in which the pericardium alone was inflamed.

From these data, we may fairly infer that it is chiefly in those cases of acute Rheumatism in which the pericardium, either alone or simultaneously with the endocardium, is affected, that we have to dread the supervention of pulmonary inflammation.

Dr. Latham has related, at considerable length, two cases of this complication of inflammatory affections, which we could have wished to have analysed and commented upon; but our limits prevent our doing this, and we therefore pass to another interesting point in the history of cardiac inflammation, to which we have not as yet alluded.

Although by far the greatest number of cases of Endocarditis and Pericarditis occur in connection with Rheumatism, there is no doubt that these diseases are not unfrequently met with, associated with other morbid states of the system. Hitherto, it must be confessed, not much progress has been made in the field of pathological inquiry. A tendency to cardiac inflammation seems to exist in various orders of the Pyrexiæ; more especially in some of the eruptive fevers, Scarlatina and Measles to wit. Certain it is, that in neglected or injudiciously treated cases of these exanthemata—Hooping-cough may be added to the number—we very frequently meet with symptoms of decided Cardiac disturbance. We are surprised to find that Dr. Latham has not alluded to this circumstance; nor has he noticed another, rather important, fact connected with the ætiology of heart disease; viz., that a gouty disposition seems not unfrequently to have something to do with the development of valvular and other lesions of this organ. He has however pointed out some conditions of the system, unconnected with rheumatism, in which Endocarditis and Pericarditis have been found; and to these we now invite the reader's attention.

In certain cachectic states, when the powers of life have become exceedingly reduced from want, exposure to the weather, neglected ailments, and so forth, it would seem that inflammation of the heart is sometimes set up; the symptoms, however, indicating its development being all the while very obscure. The following observations by our author suggest some important reflections:—

"It would hardly be suspected that the very act and process of dissolution could give occasion to *new* disease. But such is the fact. And it happens especially, if the dissolution be slow and lingering; and then this new disease

is often even of an acute kind. In no part of the body is this new disease more apt thus to light up, at the very going out of life, than in serous membranes. Among phthisical patients, who have been dying by little and little for many weeks, the instances have been numerous in which, upon dissection, I have found the marks of very recent peritonitis, the cavity of the abdomen containing a whey-like fluid, and the surface of the intestines covered with flocculent lymph, and streaked with red, and adherent where their folds lie in contact. Yet in many such cases the peritonitis has given no notice of its existence during life by its proper symptoms, and after death has occasioned great surprise by its discovery. And thus, too, pericarditis will arise when the system is at its lowest state of depression. I have known some instances (and others have been reported to me) where, after severe accidents and severe surgical operations, the powers of life being brought very low, and existence with difficulty maintained during some days, upon death eventually taking place, the pericardium has been found covered with flocculent lymph, and its cavity distended with serum mixed with pus and blood. These were the products of the most acute inflammation. But the patients were scrupulously watched during life, yet no symptoms indicative of inflammation were discovered." 357.

Several cases are related in illustration of these observations.

Dr. Latham remarks, that in all the cases of Pericarditis unconnected with rheumatism, which have come under his notice, it was invariably complicated with a morbid state of other internal parts, and especially with disease, or the results of disease, of similar structures; as with inflammation, or with serous and sanguineous effusion, of the pleura or peritoneum: in a few cases, the brain or its membranes are affected. He quotes from the work of Corvisart several cases, which quite accord with this statement. Of six cases of pericarditis not in alliance with rheumatism, recorded by Andral, three were complicated—either with tubercles and vomicæ, or with asthma and bronchial congestion, or with petechial small-pox—and three were uncomplicated. Of these latter, one commenced with symptoms of fever and cerebral congestion: subsequently severe pain in the cardiac region, accompanied with tumultuous action of the heart, came on; the patient recovered. The next one was less fortunate; the symptoms were violent, and proved fatal on the sixth day. On dissection, the pericardium was found distended with a sanguineous fluid, and its surface coated with reddish membranous concretions.

Having thus, at very considerable length, examined the history of Endocardial and Pericardial inflammation, more especially in reference to its symptoms and its predisposing causes, the question naturally arises, what is the more immediate cause of the disease, and what peculiarity is there in Rheumatism for example, or in Scarlatina, that should be liable to induce an inflammatory affection of the Heart, rather than of any other organ? For our own part, we have long been inclined to believe that it is to a state of the circulating fluids that we must look for an explanation of this pathological phenomenon. Is it not reasonable, to say the least of it, that an altered condition of the blood may occasion an irritation of the lining membrane (more especially) of the heart? That such an alteration exists in the disease which we have named—Rheumatism and Scarlet Fever—will be denied by none; and may not the same be said of the other states of the system, with which active cardiac disease has been observed to co-exist? The *ætiology* of Heart-affections is yet but very imperfectly made out. In the general run of cases, it will be difficult or utterly im-

practicable to ascertain the probable cause. In a good many, indeed, it may be found that the patient has, at some period or another, suffered from Rheumatism; but certainly not in the majority. Let us hope that the great attention that is now paid to humoral pathology will, ere long, throw some light upon this subject.

These few remarks will form an appropriate preamble to our introducing Dr. Furnivall and his work to the acquaintance of the reader. The following passage in the Preface may be regarded as enunciating the theme or position which Dr. F. has proposed to himself for elucidation, and as explaining at the same time the motives which have induced him to hazard the perils of authorship. It is necessary to premise that the language of our author is, on many occasions, far from being very distinct or even intelligible, in consequence of the repeated violation of the ordinary rules of syntax and punctuation. After telling us that he has long avoided speculative enquiries, and devoted his attention to practical subjects, he proceeds:—

"But, after lengthened experience, accumulated facts, and a consideration of the juvantia, forced on his mind a rationale of causation—a theory—which, if hereafter established as correct, must, he thinks, lead both to a clear understanding of the at present obscure pathology of Rheumatism, and to an effective protection against Heart-disease, as its consequence; it must, therefore conduce to a great curtailment of mortality, and to a prevention of much misery, more especially in the Poor Man's case." v.

The exposition of this *theory*, and of its important practical consequences, is thus laid down: the extract is a long one; but it is best to give the pith of a book in the author's own words when we can.

"Most authors attempt to explain the liability to heart-disease during a rheumatic attack, by referring to identity of structure. Rheumatism, they say, affects the fibrous structure in preference, and fibrous structure abounds in and about the heart. Now this attempt at explanation might be received as a solution of the difficulty, if rheumatism were the only cause of heart-disease; but this is not the case; nor can we thus explain the well-known tendency to inflammation of the heart's membranes, which exists in scarlatina, measles, &c. These diseases do not attack the fibrous structure exclusively, nor at all. In two cases I have found pertussis to have been followed by or accompanied with pericarditis and cardiac hypertrophy; and scarlatina, as a cause, is by no means unfrequent.

"The only proximate cause adequate to the effects, seems to me to be a morbid state of the blood itself; accordingly an excess of fibrine has been detected in the blood of rheumatic persons; which excess must render it highly and morbidly stimulant. Probably there is also some other arrangement of its primary components; which, in the present state of our knowledge, may be best described by saying, that it is relieved by an elimination of acid through the secretions, and best obviated in treatment by the use of alkalies. Possibly lithic acid may exist in excess in the form of lithate of soda. Whether this hypothesis be correct or not, I hope to be able, at some future period, to show evidence of the paramount utility of alkalies in the prevention of cardiac disease in rheumatism; and I can aver, that wherever I have seen alkalies given in rheumatism, judiciously combined with other remedies, there has been no distressing heart-complication; and I have read of cases where life has been lost, through cardiac disease from rheumatism, in spite of a treatment exceedingly able and energetic, except in the single omission of alkalies. It has been attempted to refute the hypothesis, by the answer that the blood will not allow free acid in its compo-

sition; that it is an electro-negative body. But it is not necessary that the acid admixture should be a free acid; on the contrary, it may exist under some other form; and probably in the serum. Lately I have been pleased to find that this conjecture, as to the probability of an acid nature of the blood in rheumatism, is not confined to myself: for I find an eminent practical physician, Dr. Schönlein, of Vienna, to be of this opinion also. He mentions a case where an ulcerated surface overspread itself during the night, with an earthy crystalline crust. According to Dr. Simon's researches this concretion of pus contained uric acid in a remarkable degree, combined with soda and ammonia. Dr. Schönlein thus expresses himself. 'This is quite a new fact, which, formerly, indeed was conjectured, but which has now been confirmed by chemical researches. To judge from this circumstance, it is not a very remote inference to suppose that uric acid is also existing in the blood in this disease, it being also ascertained that it also occurs in great quantity in the urine, as also in the perspiration. It has been now, moreover, found in the secretion of rheumatic ulcerations; it most likely occurs in the secretion of the mucous membranes (for the saliva has also an acid reaction;) it probably will therefore soon be discovered in the blood of such patients—*The Medical Times.*'

"So think I." 20.

Dr. Furnivall subsequently informs us that, since he has been in the habit of treating Rheumatism by the alkaline method, he has not met with a single instance out of at least 400 cases, where any Heart-disease was consecutive upon it. The alkalies act, he says, in a two-fold manner; viz., by "diminishing the undue quantity of the Fibrine proved to exist in rheumatic blood," and also by "a direct chemical action on the abnormally acrid state of the blood and the secretions."

There is another class of remedies, or at least one member of this class, that Dr. Furnivall most urgently and perseveringly recommends to the attention of medical men, in the treatment of cardiac disease—we allude to the class of sedatives; and of these to *aconite* in particular. This potent drug is said not only to have the power "of effecting a somewhat lasting modification of the heart's irritability," but also to act as a direct antiphlogistic or subduer of inflammatory action, and as a corrigent of a highly fibrinous state of the blood.

"Now any remedy which will prove an effective substitute for the detraction of blood, will be found nearly invaluable in certain cases of heart-disease—namely, in all such as occur in weakly persons, and yet are accompanied with great excitement of the circulation. In such delicate habits of body, there are two great sources of danger—the one arising from the very rapid progress of the disorder, unto, perhaps, irremediable changes of the delicate structure affected, and the consequent necessity for adopting the most energetic measures of depletion, &c., to counteract; the other, arising from the patient not having strength enough to bear the exhaustion resulting from the active treatment which has been adopted; so that although the medical man may have the satisfaction of witnessing the reduction of the disorder; he yet may find his patient shortly after attacked by tubercular consumption, or some other disorder. Under such circumstances, Aconite will be found the very substitute we want; and a proper trial will soon convince that we may thus avoid detracting many an ounce of blood which otherwise must flow." 30.

Our author does not hesitate to assert that, in future, he expects to meet with few instances even of severe acute Rheumatism, in which the judicious exhibition of the aconite may not entirely supersede the use of

venæsection! It is a direct antiphlogistic, not only by its sedative action upon the heart and arteries, but also by its power of defibrinating the blood. The only case, however, which he adduces to prove the powers of his favorite remedy upon the buffy state of the blood, must be regarded as utterly inconclusive in the eyes of any dispassionate reader: it surely cannot satisfy Dr. F. himself. The case was one of Aortic Aneurism: the patient had been repeatedly bled, and the blood drawn had always exhibited a buffy coat. He came under the care of Dr. F., who gave him aconite and *blue-pill;* he was subsequently bled; no intimation however is given of the lapse of time since the preceding venæsection, although it seems to have been a month or two; the blood this time was not buffy; *ergo*, the aconite produced the change.

After this statement of Dr. Furnivall's general therapeutic views, we shall be better prepared to appreciate the value of the modes of treatment, recommended by him and Dr. Latham, in inflammation of the endocardium and pericardium. It is quite unnecessary to allude to the description of these diseases given by the former gentleman; for we regret to say that it is most lamentably defective, and utterly unworthy of any one who has studied their history—we shall not say by the bed-side of patients, but even from the writings of recent authors. Statements of the most incongruous and conflicting nature, every now and then, occur within the compass of a single page, so that the reader is repeatedly inclined to ask whether the author has ever really seen the disease which he is describing. It is quite obvious that Dr. F. is exceedingly little acquainted with the discovery and application of auscultatory knowledge in the diagnosis of cardiac diseases, more especially of Endocardial and Pericardial inflammation. We had marked several passages for censure; but it may be unnecessary to specify them, as the third and fourth chapters ought to be entirely re-written, if the work be so fortunate as to reach a second edition.

There is, however, one offence against fair play which we cannot pass over without a special rebuke. Dr. Furnivall is, on too many occasions, exceedingly negligent in not giving any exact reference to the authors whom he has honoured by quoting from their works. Several quotations are made without any notice whatsoever of the source whence they are derived. For example, we find a page and a half taken, word for word, from the number of this Journal for July 1844, and the passage is not even placed within inverted commas. This is not as it ought to be. The extract indeed is a translation from a French work; but it would have required, we should think, a mesmeric *rapport* to have existed between Dr. F. and ourselves, before both could have made use of exactly the same words in translating one language into another.

So much in the way of censure; now for a more pleasing duty.

The therapeutic directions of Dr. Furnivall are, on the whole, much more commendable than his descriptions of the phenomena of disease. As we have seen, he keeps steadily in view the abnormal condition of the blood and of the urinary secretion in the *treatment* of acute Rheumatism, and of the dangerous complications which so frequently attend it. In this respect he has greatly the advantage of Dr. Latham who seems to have nearly quite overlooked these two most important indications of

practice in all cases of rheumatic disease. We may rest assured that, as long as the blood remains charged with an excess of its fibrinous constituent, and the urine is scanty and deep-coloured, there will always be a strong tendency to the development of some internal mischief, and to the persistence of what already exists. Our practice should therefore never fail to be directed to the correction of these two morbid states, and we shall find that those very remedies, which are known to have the most decided effect in defibrinating the blood and in neutralising the acidity—while at the same time they promote the quantity—of the urine, are unquestionably among the most powerful anti-rheumatics which we possess. That blood-letting and mercury are the best for the first of these objects, few will be disposed to question; and none can deny the superior efficacy of alkalies for the attainment of the second.

Dr. Latham has devoted no fewer than six entire lectures—upwards of a third of his work—to the treatment of acute Rheumatism and its cardiac complications. His practice, we may remark, is rather bold and heroic, than comprehensive and discriminating. He first canvasses the comparative merits of venæsection, opium, and purgatives (large doses of calomel at bed-time followed with black-draughts in the morning,) employed singly and apart from each other, and then points out the advantages and disadvantages of each of these remedies. Several of his remarks in this estimate are far we think, from being judicious. Thus, in his introductory observations, he says that the practice, pursued by some physicians of taking a single symptom or set of symptoms—for example, the high vascular action; or the pain and nervous disquietude, or the disordered state of the intestinal secretions—and of making all their remedies to bear upon that one point, is in many respects an exceedingly good and useful plan.

"Let me repeat my testimony to the success of this practice in acute rheumatism; the practice, namely, of choosing some single indication, and steadily pursuing it to its fulfilment. It is a very rational practice. It is founded upon experience, and it compasses its end by very simple means; and the manner of its successful operation may be well conceived, if it cannot be entirely explained, in the present state of our knowledge. Disease is a series of new and extraordinary actions. Each link in the series is essential to the integrity of the whole. Let one link be fairly broken, and this integrity is spoiled, and there is an end of the disease; and then the constitution is left to resume its old and accustomed actions, which are the actions of health." 187.

There is a good deal of fallacy, if not of positive and very serious error, in such reasoning as this. Disease is not a simple chain of single *links;* but a twisted rope of many *strands.* You may break or cut one; but the rope still holds together, until the force applied makes all give way. And so it is with an active disease like acute Rheumatism. There is more than one series of morbid actions to be corrected; and therefore there is more than one curative indication to fulfil. On this ground alone, we have always been unwilling in our own practice to adopt that mode of treatment which has been recommended by many excellent practitioners, and which Dr. Latham tells us he generally followed in the earlier years of his hospital practice—we mean that by the free use of opium; for example, a grain every eight, six, or even four hours, until a decided impression is made upon the malady. The pain of the disease may indeed be abated,

and the system may thus be tranquillised and kept quiet, while it is engaged in eliminating the *morbid materials* that unquestionably exist in the blood and the secretions derived from it, either by the skin or by the kidneys, or by both; but surely the opium can not have any *direct* effect in diminishing the excess of fibrine in the blood, or in neutralising the superabundance of uric acid and urea in the urine. Rheumatism, to be treated scientifically, must be regarded as (in part, at least) a *humoral* disease, and as affecting the fluids even still more than the solids of the body.

After weighing the relative value of the three modes of practice—free Venæsection, Opium, and Purgatives—Dr. Latham, like every sound physician, comes to the conclusion that it is wiser and better to have recourse to all three (in moderate doses) simultaneously, than to trust to any one of them apart and singly, more vigorously pursued. What has surprised us a good deal is that he does not allude to the exhibition of mercury—not as a cholagogue or purgative, but as an alterant or *mercurial*—in the treatment of uncomplicated acute Rheumatism; and yet surely, as this is the great remedy in endocardial and pericardial inflammation,—which he has shewn to be present in the majority of cases—we might have expected that he would have recommended it for general adoption. For many years past, we have invariably exhibited moderate doses of mercurials (with or without opium, according to circumstances) in the treatment of acute rheumatism, not omitting the simultaneous use of occasional blood-letting, and of purgatives and alkaline salts; and we have every reason to be satisfied with the practice.

As a matter of course, whenever there is reason to suspect the co-existence of cardiac inflammation, our treatment must be, if not more active, at least more watchful and sedulous. Local blood-letting, by leeches on the front of the chest and cupping between the spine and edge of the left scapula, is of great importance, if the system has been sufficiently lowered by general bleeding. Dr. Furnivall is of opinion—and he is quite right—that the use of depletory means may be carried much farther with safety in Pericarditis than in Endocarditis.*

"In the latter, syncope might be fatal; and we therefore must use the lancet very cautiously; while in Pericarditis we may bleed with much boldness. Again, nausea unto faintness will prove beneficial in the latter; but in the former, where the fibrine renders the current of blood through the heart very sluggish, faintness from langour may favour deposition of fibrinous concretions; and the patient may thus be precipitated into the second stage of fatal obstruction, which has been described." 63.

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* Dr. Latham also appears to be of the same opinion; for, after noticing the much greater fatality of endocardial inflammation in M. Bouillaud's practice than in his own, he goes on to observe:—

"Now M. Bouillaud's treatment of endocarditis has always been vigorously antiphlogistic. He has employed large and repeated bleedings, and all other remedies calculated to control inflammation, except mercury. Mercury he never used.

"My treatment of endocarditis, on the other hand, has not been vigorously antiphlogistic. I have seldom employed venæsection at all, and never largely. But mercury has been among my remedies in almost every case."

For the same reason, he would never administer Digitalis in any case of endocardial inflammation. "Alkalies," he goes on, rather incautiously, to say, "may be considered as almost specifics in this disease; and seem to reduce the abnormal thickness of the blood, very speedily and very effectually. By the combined action of mercurials, aconite, and alkalies, it appears to me that the slaughtering depletions which have been recommended, may be dispensed with; and dilatation of the heart, general exhaustion, tubercular consumption, &c., may be avoided."

We need scarcely say that blisters and other counter-irritants,* applied over the region of the heart and between the shoulders, are of very great value, when the more active and pyrexial symptoms of cardial inflammation have been subdued. Dr. Latham has strangely omitted to make mention of them; nor does he allude to the use of the Hydriodate of Potash, which has been so generally recommended as an adjuvant of mercury in so many sub-inflammatory diseases. Should any sudden attack of severe pain and dyspnœal anguish come on, in the course of any cardiac disease, a full dose of opium is the proper remedy.

So much of our space has been occupied with the consideration of the two "primitial or primigenial" (to use an expression of Dr. Furnivall) diseases of the heart, that we shall only very briefly notice the other numbers of the series.

Of *Hypertrophy*, we are informed by him that there are two kinds—"the one, a simple affection without any morbid productions, and with but little augmentation of tissue; the other is caused by some mechanical obstacle in the course of the circulation."

He repeatedly speaks of *functional* Hypertrophy, and occasionally too of *functional* Dilatation—expressions which it is certainly not very easy to understand. There may be *functional* diseases, whose symptoms simulate those of diseases which are of an *organic* nature, and which depend upon an actual alteration of structure; but might we not almost as well talk of a functional Exostosis, as of a functional Hypertrophy? In his account of the *treatment* of this very common cardiac disease, Dr. F. has altogether omitted to mention by far the most important (in our opinion) remedy—we mean, a *seton* over the region of the heart. According to our experience, it is worth all the internal remedies that have ever been recommended. Without it, not much good can be done; and from it, we may generally look for very *decided* benefit; provided, at the same time, the various secretions be attended to, and over-exercise of the body be avoided.

With regard to the *treatment* of Dilatation, is Dr. Furnivall justified in attributing the practice, which he very properly condemns, to any medical man in the present day? "The treatment of Dilatation is very obvious; we have to try to restore strength and vigour to the affected ventricle, to obviate palpitations, and relieve secondary or consequent symptoms. The routine of V. S., Digitalis (which is almost certain to be prescribed,) and of debilitating drugs, is highly objectionable; nor should a low un-

* Dr. Furnivall rather strangely says that "hot spirits of turpentine, laid on by old linen (!), will be preferable to blisters, if we want to use the stethoscope frequently."

nutritious diet be allowed in any case of Dilatation whatever: yet such a routine used at times to be met with, perhaps on account of the quick pulse and the dyspnœa."

He suggests, rather than distinctly recommends, a trial of Strychnine in certain cases of dilatation: we much question the propriety of such an experiment.

Several of Dr. F.'s illustrative cases of this form of cardiac disease, especially those which occurred in young females, may fairly excite, in the reader's mind, some doubts as to the accuracy of the diagnosis that was formed. Let us take the following example:—

"Jan. 14, 1841.—Clara P., ætat. 24, been ill twelve months with palpitation and cardiac disturbance; cannot exert herself; amenorrhœa for the last three periods; and there are no signs of any nisus menstrualis; respiratory murmur good; but the heart acts with too much noise and impulse over a large space; a whiffing sound, not a bellows-murmur, with the first sound, to the left of sternum; a pain near left nipple; pulse 108, and rather full; been getting worse gradually, but latterly very sensibly so; skin not cold; can lie on right, rather than on left side.

"Hirudin. x., part. dolent. Empl. Canthar. sterno et thorac. dextro. Submur. Hydrarg. gr. xviij., Extr. Aconit. gr. iij., Pil. Scill. C. ℈j., m. ft. pil. 12. Cap. j., nocte maneque. A mixture of Bicarbonate of Soda with Hydrocyanic Acid. Jan. 19. The Mercury was omitted; the cardiac phenomena much relieved. Jan. 23. Caught cold; and there was a return of impulse, with a cough and pyrexia. Eight leeches to sternum, and add ¼ gr. Extr. Aconit. to each dose of the mixture. At night, a Pil. Sapon. C., with Ipecacuan. and Extr. Col. C. By the 28th the undue impulse was diminished, and there were no palpitations. On the 11th of February she was well enough to be discharged, but cautioned as to her conduct. She took with her Aloetic pills to induce the catamenia, which afterwards came on. This person was becoming worse; and the catamenia having stopped, the blood becoming more and more deteriorated, would have increased the cardiac Dilatation to a fatal extent ultimately." 115.

No judicious physician could possibly regard this as a genuine case of Dilatation of the Heart.

Chap. VII., on the Diseases of the Valves, is, like most of its predecessors, defaced by many errors and unguarded assertions. Our own conviction is much at variance with Dr. F.'s statement, that "there are few practitioners possessing much experience in auscultation, who, in tolerably clear cases, will fail to point out the valve or orifice affected." This is a refinement of diagnostic discrimination which is rarely (is it ever?) attained; and fortunately the knowledge, if possessed, would not be of much practical value. Dr. F. talks also of distinguishing the second sound of the pulmonary or right semilunar valves from that of the aortic ones: truly, it must require an ear of surpassing delicacy to attain to such excellence in Auscultation. But passing over these matters, we would ask for information, does clinical observation warrant the remark that "the pulse is very peculiar, almost a diagnostic in disease of the Mitral Valve, being small, weak, intermittent, and singularly irregular?" We had supposed that this character of the pulse is a very frequent accompaniment of disease of the aortic valves; and indeed our author himself expressly admits that it is so, in the very next page.

In the part of his work now under consideration, Dr. F. has again done

us the honour of quoting largely from the pages of the "Medico-Chirurgical Review;" but, this time, he frankly makes reference to its pages.

The rules, which are laid down for the treatment of Valvular Disease, are, it may be supposed, rather preventive than curative. Reverting to his favourite pathological and therapeutic views, he says :—

"We now know from accumulated experience, that Endocarditis is a fertile source of Valvular mischief; and that in that disease there are causes in operation which powerfully favour deposition on the Endocardium; viz., an inflammatory action of the membrane itself, and an excess of fibrine in the blood; to which I would ask permission to add, a peculiar abnormal change in the components of the blood itself. As I have already alluded to this subject, I need say no more at present, than that a combination of antiphlogistic treatment, with alkalies, will prevent all deposition. In all cases, the antiphlogistic remedies must be proportioned to the activity of the inflammatory symptoms; and mercury is also an indispensable adjunct, for we now believe that mercury, besides being antiphlogistic, has a tendency to reduce the excess of fibrine—to thin the blood; —but it will not relieve the chemical change, Alkali will alone do that according to my experience; and very glad shall I be if my medical brethren will fairly try it." 144.

The reasoning in the following passage we confess that we do not quite understand. Is there not a misprint somewhere? "The treatment of all Valvular Disease has been hitherto considered, excepting by a very few practitioners, without reference to the site— to the valve diseased; yet in obstruction of the Mitral Valve our practice ought to differ materially from that pursued in Aortic Valve Disease. Indeed the indications are almost diametrically opposed; for in the former the hypertrophic action of the right ventricle requires to be reduced as quickly and completely as possible; or else the congestion of the lungs, which is a first and immediate effect when combined with the powerful propulsion of the right ventricle, will give rise to a dangerous hæmoptysis, though itself an effort of nature to save life." P. 147.

Having at considerable length discussed the diseases of the valves, Dr. F. devotes a chapter to the treatment of Aneurism of the Aorta, and then proceeds to the interesting subject of Palpitation and Functional Disorders. The occasional uncertainty of the diagnosis between these and the organic diseases of the heart is, in our author's opinion, not to be much regretted! "This circumstance," says he, "will at times prove a comfort to both practitioner and patient; as it should prevent the former from either giving or entertaining too gloomy an opinion while he awaits the results of treatment, and the latter can entertain more hope of recovery than if his medical adviser could decide that there is organic and incurable disease."

He very abruptly brings his remarks on this head to a close, and scarcely deigns to notice the treatment of functional cardiac diseases. To compensate for this unlooked-for deficiency, we are favoured with a long extract, running to nearly 20 pages, from the recent work of Mr. Sibson, of Nottingham, entitled "On the changes induced in the situation and structure of the Internal Organs under varying circumstances of Health and Disease": it was reviewed in the last number of this Journal. This

work Dr. F. mentions, in his Preface, as being "printed, though not yet published." How comes this? we received Mr. Sibson's work at least two months before Dr. Furnivall's. There must be a mistake somewhere, either on the part of the authors themselves, or their publishers. It is but fair to state that Dr. F. received full permission from Mr. Sibson to make any use that he pleased of his work.

From the preceding notice, the reader will be able to form an estimate for himself of the value of our author's production. Although exceedingly faulty in not a few respects, there are, it will be seen, some good points about it. Many of the therapeutic directions are judicious and valuable. The importance of alkalies in the treatment of various morbid conditions of the circulation is not sufficiently appreciated in the present day; and we think, therefore, that Dr. Furnivall has done good service to his readers by so strongly recommending their administration in acute Rheumatism, whether it be complicated with a cardiac affection or not. We cannot too urgently advocate the expediency of examining the state of the urine in almost all diseases. Whenever it is scanty and deep-coloured, or when it deposits a lateritious sediment, alkaline medicines will invariably be useful, be the existing disease what it may; and certainly in none does the secretion usually exhibit these characters so conspicuously, as in acute rheumatism and in scarlet fever. But even when there is no obvious or visible change to be perceived, it is always right to test the quality of the urine with Litmus and Turmeric paper. Many an obstinate and most unyielding ailment has been relieved, by attending to the therapeutic indications afforded by this simple expedient.

With respect to the sedative—aconite—which Dr. Furnivall so strongly recommends in heart-diseases, we cannot speak from experience. That it is often truly useful in chronic rheumatism is amply attested by many writers; but that it possesses any *defibrinating* power upon the blood, seems very doubtful. Opium, in combination with magnesia, will generally soothe some of the most distressing symptoms of cardiac disease better than any other remedy of its class; especially if a mustard poultice or some other rubefacient be applied over the region of the heart, at the same time. But there is one sedative that is, we fear, little thought of, and far too little recommended by medical men, although it will often tranquillise the patient's sufferings more effectually than all the resources of pharmaceutic skill. How painful is it to witness the restlessness and irritability alike of mind and body, that are so generally present in chronic diseases of the heart! and how vain are often the physician's best attempts to afford relief! In no set of maladies are the effects of the close alliance and mutually reacting sympathy of mind and body so strikingly manifest. Every excitement of the one and every exertion of the other are almost inevitably followed by a great or less disturbance of the current of blood through the chambers of the heart, and consequently by an increase in the amount of inward suffering. Hence the danger of any violent emotion, or any hasty effort; and hence the frequent occurrence of sudden death under circumstances too that are most truly lamentable. Surely then it is our duty to use and recommend every means to avert such a consequence, and to soothe, if we cannot heal, the sufferings of our patients; and where is the sweet influence that can so well subserve our wants, as the still small

voice of that religious faith that teaches us "that we should patiently, and with thanksgiving, bear our heavenly Father's correction, whensoever by any manner of adversity it shall please His gracious goodness to visit us?"

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I. RURAL ECONOMY IN ITS RELATIONS WITH CHEMISTRY, PHYSICS, AND METEOROLOGY. By *J. B. Boussingault*, Member of the Institute, &c. Translated by *G. Law*. 8vo. pp. 690. Baillière, London, 1845.

II. MANUAL OF AGRICULTURAL ANALYSIS. By *John Mitchell*. Small 8vo., pp. 143. London: Simpkin & Marshall, 1845.

THE subjects treated of in M. Boussingault's book are such as, at first sight, would appear hardly to entitle it to a place in our pages, but the rapid progress which the various departments of Organic Chemistry have recently made, and the important evidence which has been brought to light by the labours of chemists, give a great degree of interest to the progress of the science, and render their investigations into the chemistry of life, of the highest importance in a practical, as well as in a scientific, point of view. The author of the book now before us, is a chemist of high and deserved reputation, a laborious and careful experimenter, a cautious and accurate observer; and hence his views are well entitled to respect, even from those who differ from him in matters of science. The author's object is to place before his readers a complete system of scientific husbandry, in which the practical operations of the farmer are methodically arranged and their principles minutely explained, by reference to the known laws of chemical and physical science. The majority of all farming operations have for their object the production of animal food, and consist more or less of processes of combination or transformation, in which organic matter is produced by the union of its elements. It is evident that, before these processes can be thoroughly understood, a great amount of preliminary information must be acquired. The chemical composition of muscular fibre, fat, and the various tissues and secretions of the animal body must be ascertained; as well as the composition of those substances which constitute the food of animals, and the changes which they are liable to undergo when placed in the stomach of an animal, before the true theory of animal nutrition can be established. Accordingly, for some time past, the inquiries of chemists have been directed to the study of those organic substances which constitute the food of animals, and very considerable progress has been made in explaining the hitherto little understood mysteries of digestion and assimilation.

At the same time, however, that chemists have thus been engaged in collecting facts, and recording valuable experiments, they have unfortunately in too many cases been led away from the simple search after truth,

to follow up in all its ramifications some favourite theory or hypothesis, and have thus, as it were, lost the substance for the shadow, being more anxious to establish the correctness of their theory, than to ascertain the true cause of the phenomena it was originally intended to explain. But, notwithstanding this, physiologists have much to thank chemistry for, and every year, by increasing our knowledge of facts, carries us nearer to those great generalizations, which at once bring order and harmony out of apparent confusion and disorder, giving us the means of explaining innumerable facts and phenomena by one simple and invariable law.

The last ten years have effected a most important change in the science of organic chemistry, not merely from the valuable discoveries which have been made in it, but likewise from the introduction of a more strict and logical system of inquiry, a nearer approximation to mathematical accuracy, than had hitherto been attempted, or even thought of. This has arisen from various causes, and amongst others, from the improved modes of analysis, first employed by Dr. Prout, and subsequently brought to perfection by Liebig, Dumas, Mitscherlich, Erdmann, Marchand, and Will. The result of this is, that the composition of an immense number of different vegetable products has been most accurately ascertained, and the modifications which they are liable to undergo, from the influence of temperature, oxidation, fermentation, or mere spontaneous decomposition, have been clearly made out: it is true that many of these changes are nearly as unintelligible as they were before, as far as the power which occasions them is concerned; and various names have been given to that unknown power, which effects the transformation of substances, as it were, by the mere force of example, and in a manner quite different from that of all ordinary chemical affinity; but, though the nature of the power itself is still involved in mystery, the effects which it produces are well understood, and the exact changes which it causes in the composition and properties of organic substances are well ascertained.

These enquiries have of course greatly facilitated the more complicated study of animal chemistry; for, as a little consideration shows us, the food of all animals is derived directly or indirectly from the vegetable kingdom. The Herbivora feed on various proximate principles formed by plants, modifying or consuming some, and appropriating or assimilating others in an unaltered state. The Carnivora, in feeding on the flesh of other animals, take into their own systems the very substances, which the latter had assimilated or obtained from the vegetables which constituted their food. At the present time, though a considerable part of the chemistry of organic life is tolerably well understood, yet there is much of the theoretical part of the subject, and yet more of its practice, which is imperfectly, or not at all explained. Every discovery in any one branch of natural science shows more strongly the important bearing which the various sciences have upon each other, and makes it more evident that, in order successfully to study one, it is necessary to become acquainted with more than the rudiments of the others. Thus, in studying animal chemistry, we find it essential to take into consideration vegetable as well as animal physiology, the laws of heat, light, and electricity, the effects of climate, the composition of the atmosphere, and the laws of aeriform bodies; the nature of those inorganic substances which form necessary components of

the bodies of animals, or which exert remarkable influence upon them, as stimuli or poisons, and a multitude of other similar subjects. From the fact, that organic chemistry is even still, as it were, in a transition state, it is no easy task to write a good book upon the science; for, not only do many statements soon become unnecessary or erroneous, as new experiments bring fresh facts to light, so that what was a correct view of the state of the science at one time, becomes old-fashioned in a few months; but also, as many theories are still doubtful or disputed, it becomes necessary either to quote the various explanations which have from time to time been advanced, or else merely to state the facts, and leave others to draw their own conclusions. The latter course no doubt in many cases is the best, but it has this disadvantage, that it obliges the author to enter into a minuteness of detail, which renders his writings lengthy and tedious. M. Boussingault's book may, with reason, be called one of the best, if not the very best, of those which have recently appeared on the subject; it is written in a cautious philosophic spirit, and though in parts his style is verbose, yet this defect of manner may be readily pardoned, as throughout, the matter is good; in many places, especially where treating of those matters which have particularly been the subject of the author's own researches, there are passages full of value and interest.

In a book like "Rural Economy," which aspires to be a system of scientific husbandry, as will be supposed, there is little which has not already appeared elsewhere in print; but those researches which were hitherto only to be found in the various volumes of scientific periodicals, are here brought together, and arranged in a convenient and methodical form. The work commences with a chapter on vegetable physiology, the composition of plants, and their mode of growth. After describing a number of experiments on the germination of seeds and growth of young plants, the following conclusions are drawn:—

"First.—That trefoil and peas grown in a soil absolutely without manure, acquired a very appreciable quantity of azote, in addition to a large quantity of carbon, oxygen, and hydrogen.

"Second.—That wheat and oats grown in the same circumstances, took carbon, hydrogen and oxygen from the air and water around them; but that analysis showed an increase of azote in those plants after their maturity.

"The mode of experimenting followed had it in view simply to determine the assimilation of azote by certain vegetables, without entering into the question of the means by which this was effected, and indeed in reference to this point, I can only offer conjecture.

"Azote may enter the living frame of plants directly, or as M. Piobert has maintained, in the state of solution in the water, always aerated which is taken up by their roots. The observations of vegetable physiologists are not generally favourable to this view. It is farther possible that the element in question, may be derived from ammoniacal vapours which, according to some philosophers, exist in infinitely small proportion in our atmosphere. These vapours, dissolved by rains and dews, would readily make their way into plants, and might there undergo elaboration." P. 50.

In this passage the author seems, at first, inclined to throw doubt on the generally-received theory, of the ammoniacal origin of the chief part of the azote of plants; though, in so doing, he does not propose any new plausible theory, or advance any experiments to show that this theory is

founded in error. Indeed it is proved, by what follows, that this is not his opinion; he goes on to say:—

"It is long since Saussure alluded to the probable influence of ammoniacal vapours upon vegetation. Professor Liebig has more recently maintained the same opinion, and has taken particular pains to prove that rain-water always contains a very minute quantity of carbonate of ammonia.

"To this cause, which must have the effect of infusing an azotised principle into the tissues of plants, must be added another, which is perhaps not the least energetic. It is this, that under certain electrical influences, of which M. Becquerel has made a particular study, hydrogen in the nascent state in contact with azote, may actually give rise to ammonia. By means of this view, it becomes easy to conceive how new azotized organic substances, under the mere influence of the putrid fermentation, might give origin to ammoniacal salts which would then exercise a fertilizing action on the soil." P. 50.

These remarks are interesting as bearing upon the formation of ammonia and other compounds of nitrogen in the soil, a subject of great importance in a theoretical, as well as in a practical point of view; but they have nothing to do with the assimilation of the azote of ammonia by growing plants. The facts are well known, that ammonia is formed during putrefaction, that it does exist in the air, and that it has a very remarkable effect on vegetation; and it is in consequence more than probable that much of the nitrogen of plants is derived from the decomposition of that substance. The second chapter contains an account of the proximate principles of plants; the observations on the azotised elements are very clear and excellent.

"Thus, according to M. Payen, the nutritious juices, which ascend from the extremities of the radicles to the terminal points of the leaves, carry an azotized principle which accumulates in all the growing organs, at the same time that it is deposited within the entire extent of the canals which the sap traverses. It might therefore be supposed that, in the latter situation, the azotized substance was associated with matters of ternary constitution, so as to form membranes and tissues. But from the various organs of the many species studied, M. Payen succeeded in dissolving out by means of alkalies, and entirely eliminating the animalized substances, without causing the slightest rent or erosion in the tissues perceptible with the microscope; whence it may fairly be concluded that if these substances everywhere and always accompanying the young tissues of plants, they still form no integral part of them. The animalized matter seems consequently to preserve a kind of independence with reference to the organs which secrete, which convey, and which contain it; it preserves a sort of mobility, which allows of its displacement, and it was in fact necessary that this should be so; for as the period of maturity approaches, we see the azotised substance carried more particularly forward towards the generative organs, and finally become fixed, as it were, and accumulated in the seeds. I have had frequent occasion to satisfy myself that trefoil, red beet, turnips, &c., contain much less azote after ripening their seeds than they did previously, and all husbandmen know that the straw or refuse of plants that have run to seed, forms very indifferent fodder for cattle." P. 90.

This is a happy combination of the deductions from scientific experiments, and the results of practical farming. In the third chapter the theory of fermentation, and that remarkable series of transformations which saccharine substances undergo in passing into spirit, are explained. The fourth chapter treats of soils, their structures, chemical composition, me-

chanical properties, formation, and classification; and contains a vast amount of useful information, which will be studied with advantage by all practical agriculturists. The composition of soils and the consideration of those alterations in their constitution which are produced by the growth of plants, naturally lead us to the subject of manures, and this is very fully treated in the fifth and sixth chapters; the former of which is devoted to organic, and the latter to inorganic manures. The following introductory observations will illustrate the extended view of the subject which the author takes, and the clear and simple manner in which he arranges the subject.

"All the agents employed by the agriculturist to restore, preserve, and augment the fecundity of the soil, I shall term manures. In my view, gypsum, marl, and ashes are manures, as much as horse-dung, blood, or urine; all contribute to the end proposed in employing them, which is the increase of vegetable production. The best manure, that which is in most general use, is precisely that which, by its complex nature, contains all the fertilizing principles required in ordinary tillage.

"Particular cultures may demand particular manures; but the standard manure, such as farm-dung, for example, when it is derived from good feeding supplied to animals with suitable and abundant litter, affords all the principles necessary to the development of plants; such manure contains at once all the usual elements which enter into the organization of plants, and all the mineral substances which are distributed throughout their tissues; in fact, carbon, azote, hydrogen, and oxygen are found therein united with the phosphates, sulphates, chlorides, &c.

"In order to be directly efficacious, every manure must present this mixed composition. Ashes, gypsum, or lime spread upon barren land, would not improve it in any sensible degree; azotised organic matter, absolutely devoid of saline or earthy substances, would probably produce no better effect; it is the admixture of these two classes of principles, of which the first is derived definitively from the atmosphere, whilst the second belongs to the solid part of the globe, which constitutes the normal manure, that is indispensable to the improvement of soils.

"Dead organic matter, subjected to the united influence of heat, of moisture, and of contact with air, undergoes radical modifications, and passes by a regular course of transformation into a condition more and more simple. The tissues, so long as they form a part of the animated being, are protected against the destructive action of the atmospheric agents: in plants and animals this protection is not extended beyond the period of their existence; destruction commences with death, if the accessory circumstances are sufficiently intense; and then ensue all the phenomena of decomposition, of that putrid fermentation which, at the expense of the primitive elements of the organised being, generates bodies more stable and less complicated in their constitution, and which present themselves in the gaseous and crystalline conditions, forms which are affected by the inorganic bodies of nature in general." P. 311.

M. Boussingault admits that plants derive a large proportion of the carbon which they contain from the free carbonic acid of the atmosphere, but he denies that this is the only source, observing that it is possible that certain elements of carburetted dungs may be directly assimilated. That there is some truth in this remark is more than probable, for there seems good evidence to prove that, in some cases at least, plants do absorb not only certain forms of hydrocarbon, but also small quantities of organic matters. The value of ammonia as an element of manure, is more proved,

by reference to the results of practice, than by the support of scientific experiments; the author observes:—

"Agriculturists have, in all ages, admitted that the most powerful manures are derived from animal substances, an opinion or rather a fact, which, expressed in scientific language, amounts to this, that the most active manures are precisely those which contain the largest proportion of azotised principles. It is obvious, indeed, from everything which precedes, that all the substances which contribute to farm-dung contain azote; and that into many of them, such as uric acid, hippuric acid and urea, this element enters very largely.

"When we consider the immediate changes which all highly azotised substances undergo in the process of putrefaction, we can foresee that, in their transformation into manure, they must give origin to ammoniacal salts; and well-established facts prove beyond doubt that salts, having ammonia for their base, must be ranked among the most powerful of all the agents in promoting vegetation. It is sufficient, for instance, to bear in mind that, in the productive husbandry of Flanders, putrid urine is the manure that is employed with the greatest success; but we have seen that by putrefaction the urea of the urine is entirely changed into carbonate of ammonia. The fields of Flanders are consequently fertilized with a solution of carbonate of ammonia in water."

"Along a great extent of the coast of Peru, the soil, which consists of a quartz sand mixed with clay, and is perfectly barren of itself, is rendered fertile, is made to yield abundant crops by the application of guano, and this manure, which effects a change so prompt and so remarkable, consists almost exclusively of ammoniacal salts." P. 333.

It is, however, scarcely fair to adduce guano as a proof of the high value of ammoniacal salts, for though no doubt much of the effect produced by guano is due to the ammonia which it contains, we cannot suppose that all its value depends upon the presence of that substance. The fertilizing powers of guano depend rather on the joint effect produced by the phosphoric acid, ammonia, and azotised organic matters which it contains, and its value as a manure would be very greatly diminished were we to remove the phosphoric acid and azotised organic matters, which, by slowly decaying, present to the plants a constant supply of food. M. Boussingault's observations on the management of manure-heaps, and the use of liquid manure are excellent; and the chemico-agricultural descriptions of all the ordinary forms of organic manures, are plain, yet accurate and comprehensive. It is unnecessary to speak of the well-known experiments which he made in conjunction with M. Payen, the value of these in a scientific point of view is self-evident; and the means which they give of comparing the theoretical results of scientific experiments, with the practical results of the farmer, will every year become more appreciated. At the same time, however, whilst these experiments necessarily point out the numerous trains of experimental investigation, it must be remembered that the views on which they are founded are still merely theoretical, and therefore that the practical man must not be disappointed if the results of his experiments are not always so favourable as theory had led him to expect.

In the chapter on mineral manures or "stimulants," as the word "amendements" is most erroneously translated, the English reader is struck by many passages which illustrate the marked differences existing between French and English farming. Some of the theoretical views

advanced are open to question and doubt, but the analyses and positive facts described, are valuable and highly interesting. Speaking of marl, he says:—

"One sample of marl which we analysed, gave 0.002 of azote; another, from the Lower Rhine, gave rather more than 0.001 of the same element. It were, therefore, very proper in analysing marls, chalks, &c. to have an eye to their organic or azotic as well as to their mineral constituents; there can be very little question of the azotised elements being at the bottom of the really wonderful fertilizing influences of the marls of certain districts." P. 405.

That certain recent marls or calcareous muds, may contain enough nitrogen, materially to affect their value as manure is exceedingly probable, but we cannot help thinking that the powerful effects sometimes produced by particular marls, is due to very different causes; namely, the presence of phosphorus, the direct chemical influence of the lime itself, and the mechanical alteration which it causes in the soil. But little light is thrown by M. Boussingault's remarks on the action of the nitrates as manures; he quotes the experiments of practical men, to show that these salts cause plants to grow with increased vigour, but that the market value of the crops so produced is diminished; and then proposes the theory of their action, as a problem to be solved by further experiments.

"This, however, is a point in physiology which may be put to the proof by experiment, and seems peculiarly worthy of being tested in this way. I have admitted it as extremely probable, that the azote of the azotised principles of plants, has its source either in the ammonia which is the special ultimate product of the organic manure we employ, or in the azote of the atmosphere, or in both simultaneously; but the opinion which should maintain that the ammonia derived from the organic constituents of the soil, passes into the state of nitric acid before penetrating the tissues of plants, would find support nearly in the same facts which I have quoted as favouring the former view. We have seen, moreover, in our general consideration on nitrification, with what facility the azote of ammonia undergoes acidification in certain circumstances, a fact from which an argument of much potency for the nitric acid theory naturally flows. I shall here add an observation to which I have up to this time, perhaps, attached too little importance. When M. Rivero and I examined the highly irritating and poisonous milky sap of the Hura crepitans, we had occasion to leave a considerable quantity of the water derived from the sap, after separating the caseum, to itself; by the spontaneous evaporation of this water we collected really a considerable quantity of nitrate of potash. Since this time, I have had occasion to note the same salt in the sap of several trees of the Tropics. In the fruit and leaves, however, I have never found more than very minute quantities." P. 420.

It is not a little remarkable, that this very fact, of the existence of nitrates in the juices of growing plants, is brought forward by Liebig as proof that nitric acid does not yield nitrogen to plants; this, however, is a mere assertion, and one moreover not altogether borne out by facts, the truth is, that the existence of nitric acid in plants supplies no proof at all, either in favour of, or against the theory of its decomposition. Under the head of Gypsum, and after describing Liebig's theory of its mode of action, M. Boussingault proceeds to examine critically the probable truth of Liebig's explanation.

"Our harvest of clover, taken as dry, amounts on an average, from land

strongly manured with gypsum, to 2 tons 1 cwt. very nearly, per acre; and this quantity agrees pretty well with that which appears common in Germany. It is generally allowed that by using gypsum we double the produce. It would follow from this, that an acre which had not received gypsum would yield no more than 20½ cwts. of dry clover; in my opinion the reduction would be still greater. Dry clover hay, made from the plant cut when in flower, contains about 2 per cent. of azote. The 20½ cwts. of forage gained by the intervention of the gypsum would consequently contain 110 lbs. of ammonia equivalent to 134·2 lbs. of carbonate of ammonia. This consequently is the quantity of carbonate of ammonia which the gypsum ought to have been the means of procuring from the rain which falls upon an acre of land during the time that clover is upon the ground, in order to furnish the azote contained in the increased quantity of the crop.

"Now in Alsace, from the time of applying the gypsum in April, to the time of mowing in July, there falls on an average 3·92 nearly 4 inches of rain, which would amount in round numbers to 982 tons per acre. When the azote of what may be spoken of as the surplus produce derived from the rain, in fact all the water that falls ought to contain $\frac{1}{7318}$ of its weight of carbonate of ammonia. It is very questionable, however, whether any such proportion of ammoniacal salts exists in rain water; yet the proportion ought to be very much greater, in as much as we have supposed the whole of the rain that fell to penetrate the ground, none of it to run off; but the truth is that a very considerable proportion of the rain that falls never sinks into the ground; once the surface is thoroughly soaked, much that falls drains off, passes away by the ditches, and is lost with all it may contain that would prove beneficial to vegetation." P. 430.

This kind of argument, does not, however ingenious, carry much weight, and is hardly ever a fair representation of the true conditions of the phenomena it is intended to illustrate; in the present instance, the original theory was, that gypsum fixed the ammonia otherwise in a free and volatile state, contained in the atmosphere, brought down by rain, condensed with dew, or escaping from the decomposing azotised matters contained in the soil; and not merely, as our author states it, brought down in rain-water. The more practical arguments which he next brings forward, as to the comparatively trifling effects produced under certain circumstances by gypsum, have far more weight than the preceding calculations, and lead our author to the conclusion, that the chief value of gypsum as a manure is, in supplying lime to the growing plants; his arguments are ingenious and plausible, but not entirely convincing. Both when treating of the use of gypsum, and likewise subsequently, when speaking of the use of ammoniacal salts as manure, M. Boussingault expresses himself convinced, that it is impossible that ammoniacal salts in which the acid is inorganic, excepting the carbonic, can be useful to plants, and he attempts to illustrate this by some experiments of M. Schattenmann, which prove that the quantity of sulphur and chlorine in the ashes of certain plants was much less than it must have been had the ammonia been wholly absorbed as a sulphate or muriate. It is surely no argument to say, that as all the ammonia could not have been so absorbed, therefore it is evident that none of it entered the plants in that form; and setting this aside, the experiments quoted are by no means unexceptionable, as it is open to doubt whether a notable quantity of sulphur, chlorine, &c., may not have been dissipated in the preliminary process of reducing the plants to ashes?

The seventh chapter contains a multitude of curious experiments in the

rotation of crops, and is peculiarly valuable as the results described in it, being the actual operations of a farm of considerable magnitude, are free from those local effects and interferences which so greatly diminish the value of all agricultural experiments performed on a small scale. The eighth chapter explains the chemistry of feeding and fattening cattle, and, like the preceding one, invaluable for the practical experiments which it contains; the author agrees with most chemists in the view which he takes of the general nature of food.

"These several considerations, therefore, induce me to conclude that the nutritious principles of plants and their products reside in their azotised principles, and consequently that their nutritious powers are in proportion to the quantity of azote they contain. From what precedes, however, it is obvious that I am far from regarding azotised principles alone as sufficient for the nutrition of animals; but it is a fact, that very highly azotised vegetable nutritive substance is generally accompanied by the other organic and inorganic substances which concur in nutrition." (P. 521.)

The peculiar views held by M. Boussingault and M. Dumas on the subject of fattening, as opposed to those entertained by M. Liebig, are well known.

"It appears at first sight most opposite to Nature to suppose that the feeding ox finds the whole of the fat he lays on, ready formed in the food he eats; it is only, in fact, after having made repeated analyses of plants, and discovered fatty matters almost every where, and in quantities generally superior to any that had been suspected in the composition of plants, that the idea begins to acquire likelihood; finally, the chemist becomes convinced that it is so when he finds a regular association of neutral azotised substances and fatty principles in all the articles usually employed as food for cattle—in the grasses and cereals, in the leaves, stems, and seeds of plants.

"Fatty substances appear to be principally formed in the leaves, where they frequently show themselves under the form, and with the properties of wax. Taken into the bodies of animals, mingled with the blood, and exposed to the influence of the oxygen of the inspired air, they will undergo an incipient oxidation, whence will result the stearic or oleic acid that is found as a constituent of suet. By undergoing a second elaboration in the bodies of the carnivora, the same fatty substances, oxidated anew, would produce the inorganic acid which characterise their fat. These divers principles, by a still further degree of oxidation, would give rise to the fat volatile acids, which make their appearance in the blood and in the perspiration. Finally, did they suffer complete oxidation, *i. e.* combustion, they would be changed into carbonic acid and water, and be in this shape eliminated from the economy." P. 564.

At the same time, however, he does not deny the possibility of fat being *formed* in the animal system; for he says—

"For my own part, I adopt the view which supposes an animal to be supplied with fat already formed, mainly because it presents itself to me as more in harmony with the facts which I observe in our stables. Still I do not deny that it may be possible for a certain quantity of fat to be elaborated in the bodies of herbivorous animals under the influence of a special fermentation of the sugar which forms an element in their food; although I feel satisfied, from practical facts, that sugar plays no essential part in the fattening of cattle." P. 566.

"All these facts are in such perfect harmony with the simple view of assumption and assimilation of fatty matters, that it is difficult to conceive on what

foundation the opinion can repose, which would have them composed out of their elements in the animal body. Nevertheless, I am myself the first to admit that more extensive experience may lead to the modification, or even entire change of the opinion which I advocate. The facts on which that opinion is based, despite their number, are not probably yet sufficient to constitute a perfectly satisfactory or conclusive theory." P. 578.

We must confess, on the whole, that the arguments adduced in favour of the absorption theory of fattening are by no means strong, and it would almost appear that M. Boussingault himself feels this, by the cautious and reserved tone of some of the above observations.

Nothing can be more beautiful and complete than the series of experiments which prove the identity of composition of the azotised principles of plants and certain forms of animal matter; and this great point being once proved, it will at once be admitted, that very little change can be required to fit those substances for immediate absorption into the animal system. It is found that plants contain a considerable quantity of a substance or substances identical in nature with animal matter: these substances are absorbed direct into the system; independent of all evidence, it is surely improbable that these azotised substances in vegetable food should be transformed or consumed by the animal. Flesh has to be formed, the food contains the elements of flesh nearly formed, can we doubt then, that these elements are at once absorbed? in place of being consumed by respiration, whilst other vegetable matters are being transformed into azotised compounds, in fact, into the elements of flesh. Every known fact in animal chemistry is opposed to such a supposition. When, however, we search for evidence of a similar arrangement with regard to fat, we find probability strongly against such a theory. It is true that many plants contain large quantities of fatty or oily matters, very nearly allied, nay in some cases identical, with the fat of animals; but on the other hand, we find many varieties of animal food, and amongst them some of those best fitted to fatten animals, almost wholly devoid of oil or fat of any kind; when digested in Ether, they yield a minute quantity of resin or wax, but no true fat. In these cases it is evident that the fat formed must either be derived from the transformation of some of the non-azotised principles of the food, such as starch, &c., or supposing it present in sufficient quantity, from the wax or resin; in the latter case, as in the former, a distinct chemical transformation must take place; and if the necessity of this is once admitted, it does away to a great extent with the apparent probability of the theory, which supposes the fat to be *formed* by plants and *appropriated* by animals, whereas, if any chemical transformation is necessary, it is just as likely that starch or sugar may be changed into fat, as that resin may undergo such a transformation.

Although we do not think that M. Boussingault makes out a strong case in favour of his theory, it must nevertheless be admitted, even by those who adopt the "formation" view of the subject, that the oil or fat of vegetables may, in some cases, be absorbed by animals. The truth, as far as the evidence before us would shew, appears to be, that animals fed on oily food can appropriate and convert such fat to their own use, but that, quite independent of this, they possess the power of transforming non-azotised vegetable matters into fat.

The last two chapters of M. Boussingault's book treat of the more mechanical and statistical details of feeding and rearing stock; and the influence of meteorological phenomena on farming operations, a most important practical subject, and one which has hitherto been very much neglected by scientific agriculturists. Altogether the book is one highly deserving of praise, full of useful facts and sound information, and freer from wild theoretical speculation than the writings of most agricultural chemists.

In conclusion, it is much to be regretted that more care and attention has not been bestowed on the translation; it seems to have been hastily and imperfectly done, and in consequence contains numerous inaccuracies.

One of the many results of scientific farming, is the necessity which has arisen for a number of agricultural chemists. New chemical manures became the fashion, and accordingly chemists were required to assist in their manufacture. In a short time, however, dishonest persons found it more profitable to mix sand and all sorts of impurities with the chemical manures which they sold, than to send them out pure, and then a second set of chemists were required to detect and expose the frauds thus practised on simple and unsuspecting farmers. When it was found that a ship-load of brick-dust watered with stale urine, and called guano, was eagerly purchased at ten per cent. below the usual market price of that article, it is not surprising that some people found little or no effect from the use of guano, whilst others found even a small quantity killed their crops. It then became the custom to sell guano and other chemical manures with a certified analysis from an agricultural chemist; and this, for a time at least, put a stop to the system of plunder. It would appear, however, that even this arrangement was not free from defect, because, as manure-doctors had been found dishonest enough to prepare adulterated manures, so there were analysers, who did not scruple to assert that pure, which they knew was adulterated. Guano was sold with certificates stating that it contained 20, 30, or 40 per cent. of ammonia; and, at last, it was even offered with 70 per cent. of that substance! Now ammonia, being in its simple state a gas, always exists in guano in combination with some acid, let us for the time suppose it combined with carbonic acid: according to Phillips' analysis, common sesqui-carbonate of ammonia contains 29 per cent. of ammonia, so that, if the ammonia of this guano was present as a carbonate, it follows that the guano contained, independent of all other substances, at least two hundred and forty per cent. of carbonate of ammonia.

The absurdity of such a statement is self-evident to a chemist, but how is the farmer, who is wholly ignorant of chemistry, to perceive the utter uselessness of such certificates? The answer given by many to this question is, we must teach the farmer enough chemistry that he may be able to test the purity of his manures himself. This may do very well for experimental gentlemen farmers, who, trusting all the details of their farms to their bailiffs, have plenty of leisure to read scientific books, and make chemical experiments, but it is wholly out of the power of working farmers, who in fact can do nothing more than trust to the advice of any respectable chemist whom they happen to have an opportunity of consulting. During the last few years a number of books have been written on the subject of agricultural chemistry, all more or less intended to convey useful information to practical men, to enable them to understand and apply the laws of

chemical science, to teach them chemical analysis, and to instruct them in the true mode of performing experiments in a reasonable and philosophical manner. In those books, the author's fear generally has been, that he should say too much; and that subjects of consequence might be passed over, or imperfectly treated, to make room for other matters of less importance; his aim of course has been to clothe his matter in the fewest possible words, and render his language as terse and concise as was compatible with simplicity and perfect comprehensibility.

Mr. Mitchell's Manual of Agricultural Analysis is a plain and well-written little book on chemical manipulation and analysis, but it is not one which will be of much use to practical farmers, it is more suited for scientific country gentlemen, or village apothecaries, who have leisure to turn their attention to the subject of agricultural chemistry. Farmers who are accustomed to operate wholly on tons and cart-loads, are as unfit for delicate chemical experiments on fractions of grains, as they are unable to perform them from want to time. Mr. Mitchell's manual contains drawings of all the simple apparatus requisite for ordinary chemical experiments, together with plain and simple directions how to use them, the mode of using and applying tests, the nature of those elementary substances which are of most importance to the agricultural chemist, the origin and composition of soils, and the rudiments of analysis. The following brief extract, which illustrates the author's style, is from the first Chapter, on the Utility of Chemical Analysis:—

"Farmers knew that certain manures were good for certain soils; they also knew that certain soils produced luxuriant crops of some vegetables, whilst others would not grow upon them; and they also knew that, on certain pastures, cattle thrived better than on others; *but they did not know the why and the wherefore*, and could not produce certain crops at will, nor did their manures always produce the same effect, although laid apparently on the same kind of land (weather, of course, being favourable.) In this dilemma, the chemist steps in, and by informing the farmer the composition of all his crops, and then, by analysing the soil on which it is intended to grow any particular one, it can be readily ascertained whether it is fitted for the purpose. If it contains all the ingredients the crop requires, it will do; if not, they must be added in the shape of manure. And here, again, the chemist is required; for, if the manure be added without a knowledge of its contents, it may do more harm than good, by giving to the soil principles which are already in excess, and which are then deleterious to vegetable life.

"During the time other arts dependent on chemistry have been improved almost to perfection, agriculture, which is, without a single exception, the most ancient, the most universal employment of man, is still to a great extent, an empirical art. The experience of centuries has pointed out the benefits which result from the application of certain manures or 'fertilizers' to the land; but the farmer has, until very lately, taken no pains to inquire into the mode in which these various substances act. In some cases he applied gypsum to his land until it ceased to prove a benefit, and then he imagined he fully accounted for this circumstance by saying that the land was *tired* of gypsum. In other cases, salt has been applied with like result, and with the same pseudo-explanation." P. 3.

Every one who is at all acquainted with the science of chemistry must feel convinced that it will in time present a key to all the difficulties of farming, and solve all the problems of rural economy; but, at the same time,

whoever studies the present state of agricultural chemistry, must perceive that chemists are by no means prepared to answer all the questions which farmers may wish to ask them; the composition of soils, crops and manures is not yet fully investigated; the *why and the wherefore* is in truth not yet completely understood, and it will be still some time before it is: and that this must be the case no one can be surprised at who considers of how recent a date the whole science of agricultural chemistry is, and how important and extensive a subject it is. One other point in the above little extract demands comment, namely, the assertion that a soil containing the requisite elements must be fertile and fit for the growth of plants; this is not quite true, it is not only necessary that these substances be present in the soil, but likewise that they exist in that form and condition best fitted for absorption by plants; the mechanical structure and properties of the soil are quite as important as its chemical composition, and the very same elements, arranged in different conditions, may constitute a fertile or a comparatively barren soil.

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## GUY'S HOSPITAL REPORTS. 2nd Series, No. V. April, 1845. London, Highley.

THE papers in the present number are five, viz:—1, On the Pathology of Phthisis, by Dr. Addison—2, Cases in Medical Jurisprudence, by Mr. Alfred Taylor—3, Illustrations of some of the Forms of Sudden Death from Disease, as it occurred in 19 individuals in the Manchester Workhouse, by Dr. Francis—4, Reports of Cases of Diseases of Children, treated in Guy's Hospital in 1843—4, by Dr. Golding Bird—and 5, Reports of Cases of Injuries of the Chest, to which no name is attached. We proceed to notice them *seriatim*; premising that this number fully sustains the high character of its predecessors for valuable information.

### 1. ON THE PATHOLOGY OF PHTHISIS. By *T. Addison*, M.D., Senior Physician to the Hospital.

Believing that if ever we are to make any advances towards the discovery of the means of curing phthisis, it must be in the direction of an improved pathology, we regard investigations, such as Dr. Addison has long pursued in so indefatigable a manner, as of the highest importance. Advantageously do they contrast with the empirical and cruelly delusive proceedings so much in vogue at the present day! It is true that the farther we advance the more confirmed does the opinion seem to be, that there are forms of this disease for which a means of cure can never be devised; but it also becomes evident that, with these, others have been confounded, concerning which more favourable hopes may be entertained. Too little has been done, hitherto, in indicating the class of cases in which the suspension of the ravages, if not the cure of the disease, may be hoped for. That

such cases not unfrequently occur is known to every practitioner, but any peculiarity in their nature has been insufficiently observed. In this point of view Dr. Addison's paper will be found very interesting; for, although we are scarcely prepared to admit the agency of inflammatory action to be so extensive as he states it to be, we are thankful for any contribution to the elucidation and more accurate determination of this long disputed and most important question. Dr. Evans, whose work we reviewed in our last number, attributed to it a general influence, but Dr. Addison insists upon its agency in certain forms of the disease only.

As a preliminary, he has long thought that the pathology of *pneumonia* itself should be more fully inquired into, and has, as our readers are aware, from time to time published the result of his researches upon this subject. Albuminous deposits, the consequences of pneumonia, are frequently found either in the form of small, detached, rounded masses, or diffused through the pulmonary tissue. They may remain quiescent and unchanged for an unlimited period; but if fresh inflammatory action arises around them, they, from their low degree of vitality, easily lose their cohesion, and soften. The ease with which the simple form of pneumonia may be overlooked in *cachectic habits* explains why the nature of these deposits has been so frequently misunderstood. But even ordinary pneumonia, which has been duly recognised, may give rise to similar depositions without corresponding physical signs, which often arises from an accompanying pleuritic effusion masking these. Confusion again has arisen from the fact that such pneumonic induration is by far most frequently found in lungs which are likewise tuberculated. The probability of confounding this disease with disorganizing phthisis is much increased when it is situated, which however it is not commonly, at the apex, and when there is an excess of mucus in the dilated bronchial tubes. Three or four cases, in which the deposition of this grey, albuminous, matter gave rise to the symptoms of phthisis, have recently fallen under the author's notice, and are briefly adverted to. After which he goes on to observe:—

"From what has been advanced in this and former communications, I hope it may be permitted to arrange the several forms of disorganization of the lungs resulting from mere inflammation and its consequences under the head of Pneumonic Phthisis. This may be *acute:* the deposits and inflamed tissues softening down and disorganizing at once without any attempt whatever being made at induration or repair; thereby constituting one form of acute or galloping consumption. It may be *acuto-chronic;* of which I would distinguish three varieties. 1. The inflammation, though more or less acute, is slower and more insidious in its course, and manifests some attempts at repair, as indicated by various stages and degrees of induration. The induration, nevertheless, is not complete; the pulmonary tissue continues to be friable; and, sooner or later, that is to say in a few weeks or months, softens down, and gives rise to excavation; most frequently by a somewhat slow ulcerative process; more rarely by an actual slough of greater or less portions of the indurated but still friable pulmonary tissue. 2. Inflammation may supervene upon or around ancient induration, leading to disorganization, either of the newly-inflamed tissue, of the old induration itself, or of both at the same time. Lastly, pneumonic phthisis may be *chronic;* of which I would also distinguish two varieties; 1st, that in which old indurations undergo a slow process of disintegration, giving rise to vomicæ; and 2nd, that very rare form of the disease, in which an insidious inflammation

proceeds very slowly to convert a considerable portion of pulmonary tissue into grey induration, without any necessary excavation whatever."

*Tuberculo-Pneumonic Phthisis.*—"By this is meant a common form of the complaint, in which, although tubercles are present, the really efficient cause of the phthisical mischief is pulmonic inflammation. The tubercles sufficiently indicate the strumous or cachectic habit of the individual, and manifestly predispose to the inflammatory change; nevertheless they do not, beyond this, seem to be either primarily or essentially concerned in the serious changes observed to take place in the pulmonary tissue." Simple pulmonary *tubercle* when of a grey colour, and vitreous semi-transparent appearance, and of a moderately hard and resisting consistency, is termed by the author *sthenic*, being much less prone to disintegration than the *asthenic* variety, which is of an opaque white, or yellowish colour, and of a softer and more friable consistency. It is the former variety usually found in cases of tuberculo-pneumonic phthisis. The so-called enlargement of tubercle results from an aggregation of simple tubercles, or the surrounding of simple tubercle by the products of inflammation. The former may be termed *compound tubercles*, which are much more prone to disintegration than the simple. When tubercles are numerous, the neighbouring air-cells frequently take on compensatory or excessive action, and such inequality of respiration is the only sign to be observed at an early period of the disease. The presence of tubercles also induces a tendency to congestion and inflammation of the lungs, especially in their vicinity: but, unless such tendency become aggravated by various causes, the tubercles seem to cause little or no inconvenience. This inflammation (whether occurring in the pulmonary tissue or in the mucous membrane of the air-passages) which is the ordinary commencement of this form of phthisis, is of a low and insidious kind, such as is observed in cachectic and scrofulous habits; and, as it progresses, the various physical signs, as feebleness or absence of murmur, bronchophony, tubular respiration, and dulness on percussion, arise more from its presence than from the extension of the tubercles, for they may all occur when these latter are absent. The pneumonic heat of skin, when present, is often remarkably correspondent to the rapidity and extent of the local changes ascertained by auscultation.

"The inflammatory changes which take place in tuberculated lungs resemble those resulting from inflammatian of the lungs without tubercles. Although the red hepatization occurring in tuberculo-pneumonic phthisis very often passes quickly into softening, and the consequent formation of a cavity; nevertheless, when actual albuminous matter is thrown out, it, like that resulting from pulmonic inflammation without tubercle, usually manifests some attempts at repair; as indicated by more or less hardening and contraction of the deposit itself, and of the pulmonary tissue, into which it is effused. These results of inflammation have been very commonly, but erroneously, regarded as mere varieties of tubercular infiltration. * * * * * * * * * * The attempts at repair, or, induration of the pneumonic deposits occurring in tuberculo-pneumonic phthisis, are commonly very imperfect, and not durable; so that the deposits, for the most part, soonet or later undergo a second change, by which they soften down and produce excavation. This softening, however, may take place days, weeks, months, or, I believe, even years after the original deposition. When the disease has pro-

ceeded to excavation, the natural cure of the ulcer thus produced, consists in the formation of a more or less dense and permanent lining membrane—the true cicatrix of such ulcers. Although this membrane may perhaps now and then remain passive and harmless for years; it most commonly happens, that the cicatrization is imperfect and incomplete; the efforts at repair fail; the albuminous material, which ought to form the membrane, softens down, and with it successive portions of the pulmonary tissue furnishing it; and thus the ulceration proceeds, till, exhausted by unceasing irritation and imperfect nutrition, the patient dies."

In some instances, no attempt is made at repair in the pneumonic deposits, which, as well as the surrounding tissue, soften down at once, producing one form of, what is usually the result of the asthenic variety of the disease, galloping consumption. On the other hand, diffuse inflammation attacking a lung studded with tubercles, may cause death before any albuminous deposits are made. This may be called *suffocative pneumonia*, being characterized by disproportionate dyspnœa and lividity of countenance, and often by rapid dissolution.

Our remedial means are purely preventive, and are such as improve and strengthen the general constitution, and secure the removal of all causes tending to excite inflammatory action in organs so critically situated. Where this has however arisen, it must be met by moderate depletion and active and continued counter-irritation. Bland diet, warm clothing, regulated temperature, or a milder and less variable climate than our own are required. When the inflammation is considerable and obstinate, mercury may be added to the above means: but affecting the constitution by this medicine has served in some cases to hasten ulterior disorganization. We are surprized that the author makes no use of antimony in this form of pneumonia, assuredly as useful and a far safer drug than mercury.

"The disease, by proper treatment and management, may often be arrested for a time, and not very unfrequently for years; the pneumonic changes already produced, remaining in a passive state, as determined by auscultation and percussion. It is but just, and of some importance, to admit, that although the general tendency to repair or induration in pneumonic deposits, and the absence of it in tubercle, are strongly marked and sufficiently distinguishable, it is sometimes difficult or impossible to pronounce with certainty, whether the change in the pulmonic tissue be the result of tubercles, or of a by-gone inflammation; neither is it at all times easy to decide whether the inflammatory changes, when sufficiently evident, have or have not been preceded by tubercle."

*Tubercular Phthisis.*—In the form of the disease just described the tubercles being of the *sthenic* kind, and little *compounded*, usually remain quiescent until disturbed by surrounding inflammation, which proves the principal source of destruction, first of the pulmonary tissue and consecutively of the tubercles. If the sthenic tubercles are much compounded, however, they may undergo primary disintegration, independently of the usual precursory pneumonia. The line of demarcation between such cases and tubercular phthisis, consisting of a preponderance of *asthenic* and compounded tubercles, is by no means precise. Dr. Addison ably describes the condition of these latter bodies prior to, and during the process of, softening. He inquires, also, to what is the softening due, and seems disposed to refer it to some process analogous to inflammation going on in

the pulmonary tissue which is the immediate site of the deposit. Whether, however, it arises from this or a mere mechanical cause, it is certain it occurs in masses of, or even in single, asthenic tubercles, independently of any sign of inflammatory action in the *surrounding pulmonary tissue*. Still, although inflammatory action is not the immediate cause of softening in this form of tubercle, it is, when the disorganization is extensive, an almost invariable complication. It may extend from the vicinity of the tubercles to one or more inches, or it may arise at a distance from the tubercles, and is often accompanied by an inflammation of the pleura situated immediately over it. This inflammation is of an asthenic character, the albuminous matter being effused in the form of concrete or fluid pus, and no attempt at the reparation of ulceration, as sometimes occurs in the asthenic form, is made.

"The asthenic character, equally apparent in the tubercles and in the accompanying inflammation: whilst it establishes the influence of constitutional peculiarity, goes far to deprive us of all reasonable hope of ever being able successfully to combat this variety of phthisis when once developed; for, without repudiating those rare exceptions to be met with in the history of the most fatal disorders, pathology alone would lead me, however reluctantly, to subscribe to the opinion of those who pronounce this form of phthisis at least, to be at once incurable and hopeless. *Prevention* I believe to be the golden rule in every form of phthisis; and especially in the tuberculo-pneumonic and tubercular varieties; but I think I may venture to predict, that if a remedy, either of prevention or of cure, be in store, as a mercy and blessing for future generations; that remedy will prove to be very different indeed from the enervating expedients so indiscriminately employed at the present day."

Dr. Addison points out some appearances which have been very often mistaken for tubercles. Thus, in a lung which has long been the seat of irritation, the parietes of the bronchial tubes become so indurated and thickened, that their canals, on cutting across the minute ones, cease to be visible, and the truncated extremities have been mistaken for tubercles. So, too, the dilated portions of bronchial tubes, passing through an indurated lung, have been frequently mistaken for cavities containing pus, or for tubercles softening in the centre. An albuminous deposit in some of the smaller bronchial tubes, analogous to what is observed in croup, has been mistaken for tubercle. But the most frequent source of error is found in the bronchial tubes traversing the hepatized portion of a phthisical lung. Their parietes may be thickened, softened and dilated; and when they contain puriform mucus they are continually mistaken for tubercle.

Dr. Addison concludes his very interesting paper in these words:—

"Should this very imperfect communication have the effect of awakening in the breasts of practitioners and students a desire more zealously and carefully to investigate the pathology of phthisis, its principal object will have been accomplished; whether such investigation tend to confirm or to refute the proposition, that, *inflammation constitutes the great instrument of destruction in every form of phthisis*."

Appended to this memoir, there are five plates of admirably-coloured lithographed drawings of diseased lungs, in various stages of inflammatory and tubercular change, and of the appearances liable to be mistaken for tubercular cavities. We have never seen more faithful representations of morbid structure.

## II. Cases in Medical Jurisprudence, with Remarks. By *Alfred S. Taylor.*

Whatever is calculated to improve our knowledge of the medical history of Poisons—unfortunately a too common instrument of murder in the present day—demands the studious attention of every one engaged in active practice. The following cases and observations will amply repay perusal, and serve to illustrate, in some very material points, the description which we gave of Prussic Acid in our last number, p. 481.

A commercial traveller was found dead in his bed at an inn. The body was lying in a recumbent position as in natural rest, and exhibited no traces of previous convulsive suffering. The bed-clothes were smoothly drawn up to the deceased's shoulders. There had been no vomiting: but the bowels had acted involuntarily, no doubt, during the act of death, or perhaps immediately after it—a not unfrequent occurrence in animals that have been poisoned by Prussic acid. The eyes were open and particularly *bright*. About the mouth, there was a decided smell of prussic acid to be perceived. On a chair, at the back of the bed, but close to it, was a phial *with the cork in it*. It contained a small portion of a liquid that smelt strongly both of prussic acid and the essential oil of lemons.

*Dissection.*—We notice only the most striking phenomena. The fluid in the ventricles of the brain were strongly impregnated with the odour of the acid: equally so was the blood in the cavities of the heart. In the stomach also was found about half-a-pint of a viscid liquid, having a strong odour of the poison. The stomach and its contents were not forwarded to Mr. Taylor for examination, until the 12th day after the decease. They (the contents) were then turbid, of a brown colour, and had an extremely offensive odour—but certainly not of prussic acid. They were very cautiously distilled; but still no trace of the peculiar smell of this poison was perceptible; neither was its presence indicated by the appropriate tests—nitrate of silver and the green sulphate of iron with caustic potash.

Notwithstanding the absence of direct chemical evidence, there was every reason to believe that the death, in this case, was the result of Prussic acid, taken by the patient himself; and accordingly a verdict of *felo-de-se* was returned. It does not appear that the poison was detected either in the phial, or in the contents of the stomach, previously to the inquest being held; and, as we have already said, so long a time had elapsed before they were sent to Mr. Taylor, that all search for it then was fruitless. Prussic acid has been found in the stomach so late as *seven days* after death, and its odour has been perceived much longer; but, in this instance, *twelve* had elapsed. Here we may notice with advantage one or two important points connected with the history of this most destructive poison.

The peculiar odour may be wanting in a fluid, and yet the acid may be present in it, and discoverable by the proper tests; it is most necessary to remember this. On the other hand, the odour may be strong, and yet its presence may not be capable of detection by any known re-agent. Mr. Taylor remarks:—

"The blood may have the odour of prussic acid, but none of the poison can

be separated from it by distillation. I have remarked that the watery solution of the distilled product of the oil of bitter almonds with lime, after having been entirely precipitated by nitrate of silver, and filtered, retains the odour, commonly regarded as characteristic of prussic acid, as strongly as before. This shows that the odour, or an analogous odour, may exist where no test will act: in fact, the poison may be in too small a quantity for detection, since there is undoubtedly a limit to the operation of the tests." 43.

On the whole, it must be quite obvious to the candid and cautious jurisconsult that no *condemning* or *acquitting* importance ought to be attached to the mere presence or absence of the peculiar smell, apart from other evidence, in any case that warrants suspicion. In the recent case of Tawell, where the dissection of his victim took place only 18 hours after death, there was a striking discrepancy of opinion as to the *fact*. Three of the medical men present could not perceive the odour in the contents of the stomach, while two declared that they did perceive it! We need scarcely say that the mere presence of the smell, however distinct, in the stomach or in the blood, should never, *per se*, be admitted as perfectly conclusive evidence—however strong may be the presumption—of the existence of the poison, at least in criminal cases.

It has been conjectured, if not positively asserted, by Orfila and others, that prussic acid may be spontaneously generated by a re-action in the elements of organic fluids, in the act of distillation. Mr. Taylor however refuses to yield his assent to this opinion: nor does he think that a single instance can be quoted, where the production of this acid has taken place from the contents of the stomach of a person who had died from natural causes.

The circumstance that the peculiar smell of prussic acid may be very materially disguised by the admixture of certain essential oils—as those of turpentine, lemons, lavender, peppermint, &c.—should be remembered by medical men, as it may serve to put them on their guard not to be misled by the mere absence of the expected odour in suspicious cases. London porter also serves to conceal the odour of the poison more effectually than most fluids in ordinary use. Tawell used it for this end, and we have seen how well it partly served his purpose.

In a case of poisoning by prussic acid, recently reported by Mr. Crisp of Walworth, the *post-mortem* examination was not made before 70 hours after death: and then no odour could be detected in any part of the body. The most remarkable necroscopic feature in this case was the *violet colour* of the skin and abdominal and thoracic viscera, owing to the purple and blueish appearance of the blood—a phenomenon which has been observed in other similar instances.

The persistence of the peculiar smell seems to vary a good deal in different cases. It would seem that it disappears more rapidly in the human subject than in animals; and in them, although the odour may be present, the acid cannot always be obtained by distillation. Dr. Lonsdale found, in his experiments on animals, that it might be perceived for *eight* or *nine* days after death, although he could not detect its presence by chemical tests for more than *four*; and in the case of one of the seven epileptic patients, accidentally poisoned some years ago, in a Parisian hospital, Devergie states that the odour was perceived "huit jours apres l'ouverture du corps."

One of the most important questions, connected with the history of poisoning by prussic acid, is that respecting the length of time during which the patient may retain his consciousness, after having taken the fatal dose. It is of great consequence in a medico-legal point of view that physicians should be rightly informed on this subject. In the first case which we have related, it will be perceived that the deceased was not rendered insensible immediately he had swallowed (a large dose probably of) the poison: but that, after taking it from the phial—for no other vessel was found near—he had corked it and placed it on a chair at the back of the bed, and had then drawn the bedclothes smoothly up to his shoulders, and composed himself into a position of rest, inclined over to the left side. It will be remembered, too, that no appearance of the corpse indicated the occurrence of convulsions before death.* Mr. Taylor remarks that, judging from the results of experiments on animals, the extinction of life is (occasionally, at least) by no means instantaneous, even when the dose of the poison has been very large; and indeed that the rapidity of its destructive operation is certainly not always proportionate to the quantity that has been administered. On this point the following observations deserve attentive notice:—

"Prussic acid, given in equal doses to animals, begins to operate with very unequal rapidity. In some instances I have observed that the effects were immediate: there was no appreciable interval, either to the person who held the animal or to myself, between the time of applying the poison to the tongue and the commencement of the symptoms. There were convulsions with opisthotonos in cats, and emprosthotonos in mice; but in several instances, although the animal appeared of equal strength, and the dose was the same, the symptoms did not commence until after the lapse of from fifteen to thirty seconds. The same may hold with respect to the human subject. There are few cases, however, in which the person has been seen to swallow the poison, and when this has accidentally happened, those present were incompetent to watch the effects. If, therefore, we are justified in applying the results of experiments on animals to the supposed action of the poison on the human subject, we must apply them as a whole, and not make a selection. There is great variety in the effects produced by other poisons on the human body, where opportunity for observation occurs, both as to the nature of the symptoms and the time at which they commence. This is seen in cases of poisoning by opium; and why may not the same irregularities occur with respect to prussic acid? In reference to this poison, the admission of only a few seconds longer for its operation in one case than in another would account for those results which have been frequently regarded as anomalous, and justifying a suspicion of murderous interference." 59.

We may therefore receive it as a demonstrated fact that we cannot predict, from the largeness of the dose in a given case, either in the human subject or in the lower animals, the exact period at which it will prove fatal; and we are further warranted in believing that a certain period—

* "In observing whether or not the hands be clenched, it must be remembered, that in cases of natural death, where the body has not been disturbed, the thumb is almost constantly found bent towards the base of the little finger in the palm of the hand, and covered by the fingers which are semiflexed over it. So uniformly is this appearance met with, that it was some years since proposed as a sign of death by MM. Villermé and Breschet." 56.

sufficient for the performance of some voluntary act or acts—may elapse between the swallowing of a large dose and the extinction of life.

Here we must allude to another point in the history of this poison, of no inconsiderable importance. It has been believed and asserted by many that convulsions invariably precede death from Prussic acid, and that some traces of these are almost always discoverable on the body of the deceased. This seems, indeed, to be nearly true as respects the lower animals, but certainly it does not hold uniformly in the case of human beings; for, on more occasions than one, the poor victim has been found in a most composed and sleep-like attitude, without any sign whatsoever of struggling or convulsion having taken place; and this too when there was every reason to believe that the act had been suicidal.

Let us return for a moment to Mr. Crisp's case, and we shall find in its report a confirmation of the statement now made.

"The body of the deceased (aged 42) was found lying on the right side of the bed, inclining to the left, the face suffused; but it does not appear that there was any thing remarkable in the attitude, or any thing indicative of convulsion or struggling; for such a condition would hardly have escaped Mr. Crisp's observation, and would have been noticed in the report. In the chamber-vessel, which had been pushed some distance under the right side of the bed, there was found a tumbler, with a two-ounce empty stoppered bottle; the stopper out of the bottle, and the printed label, with 'Prussic Acid' on it, floating in the urine. The quantity of poison taken could not be ascertained; but there was strong reason to believe that the dose was large. A question arose at the inquest, whether, after taking the fatal dose, the deceased could have put the tumbler into the chamber-vessel, have pushed this under the bed, and then turned himself over on the left side. There was no doubt from the evidence that this was a case of suicide, and that these acts had been performed by the deceased. It is highly probable, from the size of the bottle and other circumstances, that the dose of poison was much larger in Mr. Crisp's case, than in that here reported; yet it is to be observed there were no signs of convulsions in either instance; the acid would have occupied as much time in the one case as in the other: and hence it is fair to infer, that in neither could the loss of consciousness and voluntary power have been *immediate*." 53.

We cannot therefore doubt that a person is capable of voluntary exertion, to a certain amount, for a short time after he has swallowed a large dose of this most deleterious poison. But if a medical man were asked whether a person could perpetrate suicide by other means, after having taken Prussic acid, his answer would assuredly be in the negative. The following case, which is in this respect of some interest, occurred in London in April 1839. A young man was found hanging quite dead; and he had evidently taken prussic acid, for a cup was lying near him which had contained that poison. The medical practitioner, who gave evidence at the inquest, very properly inferred that the man did not swallow the poison until after he had adjusted the rope round his neck. It can hardly be admitted that a man should have power to adjust a rope and hang himself, after having taken a large dose of prussic acid; but undoubtedly a person might be found drowned with prussic acid in his stomach, and without the fact being incompatible with suicide. It is, however, a matter of doubt, determinable only by the special circumstances of the case, whether a man could destroy himself by fire-arms, after having taken this poison.

There is still one point more in the history of poisoning from prussic acid that calls for some notice. In the recent case of Delaney, tried for the murder of his wife, it was stated that the insensibility produced by the poison is, in almost every case, immediately preceded by a shriek, or scream. We would caution our readers not to attach too much importance to this assertion; for, in numerous experiments on animals, it has been found that death takes place without their uttering any cry whatever; and the same has been remarked in the case of the human subject, when the suicidal act has been committed in the presence of another person. On more than one occasion, the deceased has been known to utter a few words, rational in every respect and indeed declaratory of his dreadful deed, and then to fall back and die immediately afterwards. In one case, the party exclaimed to a person in his room, "It's gone;" and, in answer to a question put, said "I have taken it." He was again about to speak, but his articulation failed him; he became insensible, and expired. In another, an apothecary's assistant was the unhappy victim. He had gone to a cellar to procure a drug. A few minutes afterwards, he was heard to cry out "Hartshorn." Some persons hastened to the spot, and found him on the lower steps of the cellar, just uttering the words "Prussic acid:" life was extinct immediately afterwards. From these facts, we perceive that the assertion of Delaney, that his wife had spoken to him a few words after he heard her scream, *may have been* really true.

When the dose taken is only barely sufficient to destroy life, the fatal effect may not be produced for a considerable time. In the case of the Parisian epileptic patients, already referred to, each took a quantity equivalent to about 0.7 of the pure anhydrous acid, and they all died in from 30 to 45 minutes.

Mr. Taylor has appended some remarks on the *tests for prussic acid*, that deserve the notice of the medical chemist. For these, we must refer to the memoir itself.

## III. Illustrations of some of the Forms of Sudden Death. By *D. J. T. Francis*, M. B.

We invite the attention of all our readers to the following summary of Dr. Francis' very instructive communication, and beg of them to bear in mind the remarks which we have made on the treatment of Apoplexy in a previous page. They will find, in the present article, fresh proofs of the necessity of caution in the use of blood-letting in the medical management of a sudden *fit*, whether it be of an apoplectic nature or not.

Within a period of two years and five months, 1000 deaths occurred among the inmates of the Manchester workhouse, in which Dr. Francis is the resident medical officer. Of this number, nineteen were instances of what is usually understood by the term "sudden death;" which it is intended, with one or two exceptions, to apply, in the following narration, to those cases wherein life has become extinct within a quarter of an hour from the commencement of the fatal seizure. We proceed to analyse them; this it is the more easy to do, as they are arranged under separate heads.

I. *Cases in which the Cause of Death was seated in the Brain.*

Three examples are given. The first occurred in a man, æt. 56, who, although he had been disabled for four or five years by a partial palsy of the left arm and leg, continued in good general health. One day, while standing up in the middle of the yard, passing his urine (he had considerable difficulty in micturition), he was observed to glide easily to the ground: he gave two or three short cries, but there was no struggling. "Within two minutes after he fell, being close at hand, I saw him; but from this time there was no attempt at inspiration, the whole apparatus being quite motionless, although the heart continued to beat, pretty forcibly at first, and afterwards with a series of three or four faint pulsations, and gradually lengthening intervals, for nearly three minutes after I first saw him. The face was not remarkably livid: the pupils were somewhat, but not much, dilated. From these circumstances, an effusion of blood interfering with the respiratory portion of the medulla oblongata, and annihilating the perception of a 'besoin de respirer,' was predicted."

*Dissection.*—Extensive effusion of blood at the base of the Brain and around the medulla oblongata, Lateral ventricles empty; a few clots in the fourth ventricle. The arteries at the base were studded with opaque atheromatous spots; on gently throwing a current of water into the basilar artery, two jets issued from apertures in the posterior cerebral arteries. *Heart* sound, or nearly so. Some traces of an old pleuritic and pneumonic attack in the left lung. Abdominal viscera sound.

*Case* 2.—A man, æt. 58, having been absent for a minute in the water-closet, was heard to fall on the ground. He was found comatose; the breathing was slow and heavy; the countenance was of a sub-livid hue; the pulsations at the heart and wrist were full and powerful, and continued most distinctly for some time after all attempts at respiration had ceased. The pupils were at first contracted; and afterwards somewhat, but not greatly, dilated. Death took place in about eight minutes. This man had had an attack of partial hemiplegia six years before.

*Dissection.*—The lateral ventricles of the *Brain* contained a large quantity of bloody serum and florid clot. Great softening of the *fornix* and of the ventricular parietes. There was extensive effusion of recent coagulated blood at the base of the brain. The fourth ventricle was filled with a coagulum, which, after firmly investing the medulla oblongata, passed down the spinal canal, as far as it could be seen. There was no appearance of disease in the posterior cerebral or basilar arteries; but, when water was thrown into the latter, it escaped freely from the vessels in the fissure of Silvius, which were becoming opaque and hardened. *Lungs* almost entirely healthy. Pericardium adherent in nearly its whole extent. Left ventricle of the *heart* much thickened; valves sound. Both kidneys granular.

*Case* 3.—A man, æt. 54, a tailor, soon after eating a hearty breakfast of porridge and milk, and while sitting in the usual cross-legged posture at his work, suddenly complained of pain in the head, and fell from his seat, becoming almost immediately quite insensible. He had returned

from the water-closet only a few minutes previously. He died within five minutes from the moment of the seizure.

*Dissection.*—All the sinuses of the *brain* were enormously distended: its substance throughout seemed healthy. Ventricles empty. No appearance of extravasation anywhere. After the brain was removed, several ounces of blood flowed from the spinal canal and the base. Both *lungs* were excessively gorged with fluid blood. The *heart* was small, pale, and flabby; left ventricle thin and lacerable; when cut into, there escaped about four ounces of dark fluid blood, much of which came from the aorta. The right side was not quite so full of blood; the ventricle containing a loose fibrinous clot, the only one found in the body. The abdominal viscera were dark and congested, but seemingly healthy otherwise.

*General Remarks.*—With respect to these three, and such like, cases, we may presume that the cause of death is pressure upon the *medulla oblongata*—whether applied immediately to the part from extravasation, or indirectly from the general distention of the cerebral mass with blood—and the consequent suspension of the function of Respiration. The following illustrative observations will be read with interest:—

"Independently of the pathological interest which attaches to these cases, they were alike characterized by a remarkable symptom, which, as it was carefully observed, could not fail to arrest the attention;—I mean, the decided manner in which the action of the heart and the pulse at the wrist were prolonged, after the respiration had completely ceased. This circumstance was obviously due for its cause to the especial manner in which the hæmorrhage that had taken place had compressed the medulla oblongata, and so annihilated the function of the part which presides over the respiratory movements; whilst the heart, being less completely under the influence of that portion of the nervous system, had continued in its action, ceasing only from the obstructed circulation through the lungs. Experiment and previous pathological observation had long since established the fact of the dependence of the respiration upon integrity of the medulla oblongata; but the availability of the priority in cessation of the action of the heart or lungs, as a means of elucidating the causes of sudden death, appeared further to be an object well worthy of careful investigation." 97.

II. *Cases in which there was Congestion of the Right Heart and Lungs.*

*Case* 4.—A woman, æt. 73, was sitting upon the close-stool, to which she had walked unassisted, and suddenly exclaimed that she was blind. She was helped into a chair, and, in less than ten minutes (perhaps five) was dead. There was no struggling; the countenance remained quite placid. She had been heard to complain of palpitation of her heart for two or three days before her death.

*Dissection.*—The *brain* was remarkably healthy; so were the *lungs*, upon the whole, except that they were much congested. *Heart* rather large; much fat upon its surface and among its fibres; the valves healthy; all the cavities contained a great quantity of fluid blood like tar: upwards of three pints flowed from the section of the great vessels. There was a remarkable accumulation of fat, and also many enlarged bronchial glands, closely applied around the base of the heart. "The loose cellular tissue about the apex of the pericardium had become converted into a dense

steatomatous tumour, which had insinuated itself between the vessels, and left visible marks, in the alteration of form which had followed, of permanent compression of the pulmonary arteries and veins." The parenchymatous viscera of the *abdomen* were much congested.

Here then was an example of genuine Asphyxia.

The next *case* (No. 5) is in many respects similar to the preceding one. An old woman was in the act of dressing herself, when she suddenly became faint, sank into a chair, and in a few minutes expired. She had been complaining, the day before, of dyspnœa.

*Dissection.*—In this case, too, there was an immense mass of enlarged and indurated bronchial glands—one or two of which were almost as large as a hen's egg—surrounding the lower part of the trachea and the bronchi, which were flattened and compressed. The great blood-vessels also must have been subjected to considerable pressure, when the morbid mass was turgid with blood. The *lungs* were saturated with fluid blood. The *heart* was rather large. The head was not examined.

*Case* 6.—An idiot boy, 10 years of age, was found dead in his bed. He had never been affected with epilepsy. On *dissection*, the chief morbid appearance found was the *thymus* gland of very great size, mottled with intense congestion. The *thyroid* also, and the communicating slip between the two lobes, were in a similar condition. When full of blood, they must have caused considerable pressure upon the great vessels and bronchi. The whole venous system was much congested and loaded with blood.

The enlargement of the Thymus in this case deserves notice, from the circumstance that this lesion is believed to have something to do with some alarming chest diseases in children.

Case 7 is entitled, *Emphysema of the Lungs, Fat Heart, Repletion, Exercise, Exposure to Cold; Sudden Death within five minutes.* The most conspicuous necroscopic appearance was enormous distention of the right cavities of the *heart* with fluid blood: the walls of the ventricle on this side were much thickened. Both *lungs* were emphysematous; their central parts loaded with blood and serum. The *brain* was sound.

*Case* 8 was similar in most respects to the preceding: the patient died within five minutes after the attack.

*Case* 9 was one of sudden Hæmoptysis. A cachectic young man, while carrying a box of medicines up stairs, was seized with a copious exspuation of blood. He died within five minutes of the attack. On dissection, the *lungs* were found to be deeply congested, and had acquired a spotted appearance in parts, from blood having been drawn into the air-cells. The *heart* was sound. The liver, spleen, and kidneys were immensely hypertrophied,* and soft and pale in texture.

* This term is greatly misused in the present day. The viscera mentioned were doubtless much enlarged in dimensions; but surely the enlargement was not from *over-nutrition.*

*Case* 10 affords another example of Asphyxia from pulmonary hæmorrhage. The patient, æt. 33, was phthisical. While straining and coughing upon the close-stool, he began to spit blood, and continued doing so until his death, in about 12 minutes from the moment of the attack.

*Dissection.*—In the upper lobe of the left lung was a large irregular vomica, from which the hæmorrhage appeared to have taken place; for along its wall ran a branch of the pulmonary artery, almost entirely denuded of surrounding tissue. Water thrown into the pulmonary artery escaped abundantly into this vomica, and apparently from the denuded vessel, where it was dipping into the pulmonary tissue; but the existence of an opening in it could not satisfactorily be ascertained. In several parts, the blood appeared to have been drawn into the areolar tissue of the lung, small patches of increased redness and density being scattered about. Heart healthy.

*Case* 11 is entitled *Hæmoptysis—Obstructive Disease of the Heart—Sudden death in the Night.*—The patient was found dead in her bed. She seemed to be quite well the night before. On *dissection*, blood was found throughout the air-passages generally. The *lungs* were greatly congested. The mitral valve was much puckered, and the left auriculo-ventricular opening considerably contracted.

In the three preceding cases, death seems to have been occasioned by the obstruction to the admission of air into the pulmonary cells from the extravasation of blood. "The chief danger, under such circumstances, would seem to arise from the suddenness and extent of the hæmorrhage, the blood being poured out more rapidly than its evacuation can be effected; in addition to which, it coagulates about the fauces and mouth, especially when the expulsive efforts on the part of the patient begin to fail. When these conditions are most effectually in operation, asphyxia is accomplished as speedily as in cases of drowning, strangulation, and the like; as was evidenced in Case 9, where life became extinct in from three to four minutes from the moment of seizure."

### III. *Cases in which Death was the result of Syncope.*

Five examples are given under this head. In the first, the death was almost instantaneous from *rupture of the left auricle.* The pericardium contained nearly 20 ozs. of blood.

The next case is more interesting from the more gradual sinking of the patient, who was 59 years of age. Dr. Francis says:—

"At 10 A. M. on September 22d, 1844, I was sent for to visit him. He had been taking a short walk, and whilst in the act of practising upon the violoncello, previous to playing at church, he was seized with intense pain across the forehead, faintness, and vomiting. He was sitting with his body bent forwards: the face was pale, shrunk, and expressive of agony: the pupils very slightly dilated. The intellect was unimpaired: the heart's action was very faintly perceived; the pulse scarcely at all.

"He was conveyed to bed; but died in about one hour and a half from the commencement of the seizure, having previously experienced some severe pains in the cardiac region." 69.

*Dissection.*—The pericardium contained about 26 ozs. of blood. *Heart* not much affected; but the aorta greatly diseased. Its internal coats were very brittle, and lacerable. At one point there was a round ragged opening in the external coat, large enough to admit a crow-quill; and about half an inch lower down there was a longitudinal slit in the internal coat of the vessel. Thus the lacerations in the two tunics did not correspond. Hence the cause of the extravasation of blood into the pericardial sac having been slow and gradual. The circumstance of this patient having been suddenly seized with "intense pain across the forehead, faintness, and vomiting," might naturally have suggested the idea that it was a cerebral attack. Perhaps it was so in part; for, although the substance of the brain appeared on dissection to be quite sound, its arteries were extensively ossified, so as in some parts to be nearly obliterated.

In *Case* 16, the sudden death was owing to the *rupture of an Aneurism* of the descending thoracic aorta into the left pleura. The heart was sound. The other two cases under this head need scarcely be mentioned. In one, there was a large aortic aneurism: the patient died almost immediately after attempting his own life, although he inflicted scarcely any injury upon himself.

### IV. *Cases wherein Death resulted from Epilepsy.*

Three examples are given. In two, the sudden death occurred during the night in bed. In the third, the patient had had several fits during the day of her decease: after one, at 9 P. M. being at the time in bed, deep coma supervened, and she died in a few minutes after its commencement. In none of these cases, did dissection reveal anything conclusive as to the cause of death. How unsatisfactory upon the whole is the necroscopic history of this disease, Epilepsy!

Here we close our notice of this valuable paper with the following interesting extract. "In the absence of previous history, and under circumstances which afford but little time for deliberate reflection, the observation of the condition of the pulse and breathing would seem, so far as the few cases herein cited will allow, to be available with readiness in the diagnosis of the causes of these sudden deaths: at the least, encouragement is given for further investigation. It has fallen within the experience of most persons to have met with such cases, where, in the absence of post-mortem examination, various interpretations have been put upon the symptoms, whether referable to lesion in the head or chest, by different observers who have been present. Thus the sudden approach and ingravescence of the attack are not at all times in favour of the heart, as is borne out by three cerebral cases, especially Case 3. A pallid or livid face may be compatible with most of the varieties of sudden death; and in those cases wherein the state of the pupils is noticed, no uniformity was observable. Again, intense pain in the head, which, if present, might seem fairly to indicate a cerebral lesion, was most strikingly evidenced in the case of I—— (Case 13), who died from hæmorrhage into the pericardium. Vomiting also was a prominent symptom at the advent of this man's seizure. In fact, most of these signs are indicative merely of certain

accidental complications not necessarily connected with the fatal lesion; and may therefore exist with lesions of totally different characters, provided only that the conditions upon which they depend happen to be present."

Our readers will probably have observed, from the preceding cases, how frequently the fatal attack appeared to be owing to the straining that attends the act of defæcation.

## IV. Reports of Cases of Diseases of Children, with Remarks. By *Golding Bird*, A.M. and M.D.

The first subject discussed and illustrated with cases is *Remittent Fever*. Sixteen cases were admitted into the children's ward during the twelve-months, 1843–4, and about seventy were treated as out-patients.

"Under the general term," says the author, "of infantile remittent, gastric, or worm fever, most authors have, I think, confounded two very distinct affections; one depending almost entirely on derangement of the functions of the gastro-intestinal tube; the other upon more or less distinct malarious influence. A child previously well, partakes of unwholesome or indigestible food, and soon becomes irritable, peevish, and morose; loses its appetite; picks its face and nose; has an unpleasant odour of the breath, with a more or less tumid belly, some sickness and irregularity of the bowels. Fever comes on, generally having pretty regular exacerbations; the tongue becomes furred; and a short, hacking cough appears. This state of things may go on for almost any period; under judicious treatment, and even without treatment in robust children, ending in the great majority of cases, in health; whilst in strumous children the powers may become so impaired, that mesenteric disease, or obscure brain affection, may be ultimately induced, which may, and often does, prove fatal. The subject of such symptoms is said to be labouring under gastric or worm fever, whether accompanied by the development of ascarides or not. It is true that remissions, often distinctly marked, occur; but still there are, I think, sufficient grounds of distinction to allow us to diagnosticate this ailment from the *true remittent fever*, which, so far as I have seen, is never met with, save under circumstances involving more or less malarious influence. The true remitting fever, of which the first three cases may be taken as examples, prevails most generally during spring and autumn. The autumnal epidemic having, during the last two years, been, what I believe it generally is, the most severe. In both years it occurred most abundantly in September, and generally nearly disappeared in January. Almost all the cases occurring under treatment at the hospital were in children of families residing at Bermondsey, Rotherhithe, Deptford, and other places sufficiently near the banks of mud left by the Thames at each ebb-tide, to explain the possibility of the malarious origin of the disease. In the epidemic of the autumn of 1843 the disease was peculiarly severe in the districts alluded to, and existed contemporaneously with ague, which was particularly frequent among the applicants for relief at the hospital." P. 115.

The two sets of cases are, or at least ought to be, easily discriminated. In the *gastric* remittent fever, the disease is chronic; the alvine evacuations are always disordered and offensive; and the febrile paroxysms are never so severe, nor the remissions so complete, as in the *malarious* form of the disease. The latter generally attacks suddenly, often in the midst of robust health, and may frequently be as promptly subdued by appropriate

treatment. Occasionally, indeed, both forms of the fever are co-existent; the one being superadded upon the back, so to speak, of the other. Such cases require, as a matter of course, more tact in their management.

Now for the *treatment;* and first of that of *Gastric Remittent Fever:*—

"The use of mild mercurials, especially of the valuable pulvis sodæ compositus* of Guy's Pharmacopœia, in doses of three to eight grains at night, and a full dose of the pulvis rhæi salinus,† given every morning for a week or longer, was in almost every case successful. The latter compound is well known to the profession for its peculiar and almost unique influence in these affections; so much so as, in my mind, almost to justify the elaborate praise accorded to it by Dr. Fordyce seventy years ago,"‡ P. 110.

Two or three grains of the Hydrargyrum cum cretâ—to which a grain of Ipecacuan is added—at bed-time, and a dose of infusum Sennæ, Manna, and carbonate of Soda in the morning, will be found excellent substitutes for these medicines, in certain cases. Rigid attention to the *diet* of the child is an indispensable item in the treatment. Farinaceous substances, milk, and light broths are the best articles of food.

*Treatment of Malarious Remittent Fever.*—The following plan was adopted by Dr. Bird:—

"As a general rule, the hair has been cut short or removed; the surface of the body daily washed, with or without the use of the warm-bath; the diet extremely spare; and for medicine, after clearing out the bowels by hydrarg. c. cretâ, given in a single dose, or repeated each night, followed by a moderate dose of ol. ricini, the sodæ sesquicarb. in small doses has been generally preferred. As soon as the state of the secretions has been corrected, and the tongue become freer from fur, the paroxysmal exacerbations being distinctly marked, the Quinine has always been given. In a short time the remissions become longer and more complete, and in a space of time, seldom exceeding a week, the child has been convalescent. I have often been astonished to observe how almost specifically the quinine has acted in some of the severest cases. In one instance, when I had occasion to be at the hospital late at night, I found the little boy, William J——— (Case 1) with an ardently hot skin, with face almost scarlet, a sharp pulse, almost too rapid to be counted, and delirium; in fact every symptom of fever so intense as, in the minds of some of the pupils who were with me, to justify most active antiphlogistic treatment; and yet the next morning, a remission having occurred, he bore the quinine in two-grain doses, and within five days the child was convalescent." P. 116.

When the remissions were not very distinctly marked, an emetic generally served to produce this effect; and then the Quinine was given, and it invariably cured the disease.

In many of the cases, an eruption of Urticaria, and sometimes of Erythema, occurred during the hot fit of the fever.

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* "Sodæ Carbonatis exsiccatæ 3v. Hydrargyri Chlorjdi 3i. Pulv. Cretæ compositi 3x. m."

† "Rhæi radicis pulv. 3i. Potassæ Sulphatis 3ij. m."

‡ "Had I been more ambitious of dying a rich man, than of living an useful member of society, the powers of our anti-hectic powder in curing, as if by miracle, the hectic fever and the swelled bellies of children in this town would have remained a secret while I lived.—*Fordyce on Fever, Third Edition,* 1777, *p.* 228."

*Acute Croup.*—One severe case of this disease, successfully treated, is related. Warm baths, leeches to the throat, the use of emetics, and of frequently-repeated doses of calomel and tartrate of antimony, were the remedies employed. The temperature of the ward was raised to 68°, by an additional stove placed near the child's bed; and a dish of water was placed on the hot plate, so as to keep the air of the ward constantly moist. Dr. Bird thus comments upon the treatment that was pursued:—

"That the loss of blood by leeches was of great service no one can doubt; although, probably, it would have succeeded better had it been earlier had recourse to. The antimony must, however, be, I think, regarded as the great remedy in this case. The proper action of the skin, maintained for so long a time, and kept up by moist hot air surrounding the patient, must have exerted an effective derivative influence from the inflamed mucous membrane of the larynx and trachea. The good effect of the hot moist air was not limited to the skin; for, entering the air-passages at each inspiration, it must have acted as a local vapour-bath to the inflamed tissues, and have certainly, to some extent, relieved the dyspnœa of the little patient. From what I witnessed in this case, and in two others since, in private practice, I feel inclined to urge upon the practitioner the propriety of keeping the chamber of the patient with croup as near 80° as possible, by means of closed doors and a good fire, and loading the atmosphere of the room with aqueous vapour, by keeping water constantly evaporating in some open vessel. In this case opium was early given in the form of compound tincture of camphor; believing it to be of great service in warding off spasm of the glottis, which certainly is in very many instances the immediate cause of death." 123.

*Infantile Syphilis.*—Several cases of syphilitic eruptions in young children are recorded. They were all promptly cured by small doses of Hydrargyrum cum Cretâ, given at bed-time, and a grain or so of Iodide of Potassium in syrup or decoction of Sarsa two or three times a day. The little creatures generally seemed to fatten on these medicines, so well did the treatment appear to suit. The diagnosis of infantile syphilis is usually abundantly obvious.

"The characteristic *snuffling* will often enable the practitioner to recognise the existence of disease, even before he has confirmed his opinion by visual examination. The puckered mouth, the position of the very characteristic eruption round the lips and anus, in addition to the peculiar varnished and fissured appearance of the parts from which the scales have faded, will seldom if ever fail to convert a suspicion of the true nature of the disease into positive certainty." 130.

*Dropsy after Scarlatina.*—This is a very frequent sequela of the fever in certain epidemics. In most cases, it seems to be traceable to a deficiency of the cutaneous perspiration, for a due length of time after the eruption has disappeared. Hence neglect of proper clothing and exposure to cold are the common exciting causes. The non performance of the cutaneous functions induces a congestion of the kidneys, as shewn by the deficient quantity, deep colour, and the albuminous character of the urine;* and, as

* Besides albumen, the Urine in scarlatina often contains red particles of

the system is not duly relieved by this secretion, the consequence is, that an effusion of serum takes place into the subcutaneous cellular tissue, and sometimes also into some of the internal cavities, of the body. It may seem strange, but it is not the less true, that Anasarca is more frequent in those cases where the eruption has not been vividly out, than where it has. This may, perhaps, be owing to the circumstance that the child is more apt to be neglected and sooner exposed to the weather, when the rash has been indistinct.

Keeping these remarks in view, the therapeutic indication will at once be obvious. Warm baths, confinement to bed, the use of diaphoretics, and the application (in some cases) of a large bran or linseed poultice to the loins, constitute the most simple and, generally too, the most successful line of treatment. If we have reason to expect great congestion of the kidneys, it will be prudent to draw a little blood by cupping from the renal region. The anasarca is usually observed to decrease *pari passu* with the appearance of sensible perspiration upon the surface, and the disappearance of the albumen from the urine. As the patients are often left weak and anæmiated after such attacks, the exhibition of some mild chalybeate will be found of much use.

Besides dropsical effusions, there is a marked tendency to the development of insidious inflammation of the serous membranes—more especially of the arachnoid, pleura and pericardium—in certain constitutions after an attack of scarlatina. Some patients again suffer from spasmodic pains in the limbs, but without there being any tumefaction or redness of the joints—a bastard sort of rheumatism. These pains generally yield to the use of warm baths and antimonials. We need scarcely say that the state of the urine should always be carefully examined in this as well as in the other sequelæ of scarlet fever. As it is highly probable that the train of effects—often of a grave character—following this disease are, at least in a great measure, referable to the retention of the nitrogenised elements of the urine in the circulation, the following "simple and easy process for the detection of urea in the blood and serous fluids"—recommended by Dr. Bird—may deserve to be generally known :—

"Allow the blood to coagulate, decant the serum, and agitate it violently with its own bulk of rectified spirit: a dense deposit of albumen occurs, and the mixture may be set aside for subsequent examination, or, if time permits, this may be proceeded with immediately. For this purpose, throw the whole on a filter, and evaporate the filtered fluid slowly to a drachm or two; then add to it an equal bulk of dilute nitric acid of the Pharmacopœia, and once more filter. The filtered fluid, collected in a watch-glass, may be slowly evaporated to a few drops, and, on cooling, feathers of nitrate of urea will form in the liquor. Should the crystallization be imperfect, the deposited nitrate may be re-dissolved in a few drops of water, the solution decanted, and once more slowly evaporated. By this simple process, requiring no apparatus beyond an evaporating dish, any one may satisfy himself of the existence of urea in serous fluids containing it. With ordinary care the evaporation may be performed on the hob of a parlour fire-place,

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*blood*, and also a number of large organic globules. On the other hand, the blood contains some of the elements of the *urine*; as proved by the existence of urea in it, as well as in the secretions derived from it.

especially if a piece of card-board is interposed between the evaporating dish and surface of the hob, to prevent any accidental elevation of the temperature to too high a point." 139.

Dr. Bird's paper closes with a few remarks

*On the Use of Alum in Pertussis.*

As a matter of course, it is only in the non-inflammatory stages of the disease that this, or any analogous, medicine should be exhibited. "I have not yet met with," says our author, "any other remedy which has acted so satisfactorily, or given such marked and often rapid relief to the child. The dose, in my hands, has generally ranged from two to six grains in children from one to ten years of age, repeated every four or six hours. For a child of two or three years the following formula has generally been employed :—

Aluminis gr. xxv. Extracti Conii gr. xij. Syrupi Rhœdos ʒij. Aquæ Anethi ʒiij. m. capiat coch. i. med. 6tâ quâque horâ.

"I have never met with any inconvenient astringent effects on the bowels during the exhibition of this remedy: on the contrary, in more than one instance, it produced some diarrhœa. The only obvious effects resulting from its use were, diminished secretion of a less viscid mucus, with marked diminution in the frequency and severity of the spasmodic paroxysms."

The sulphate of Zinc has similar virtues, and will often be found a valuable remedy, combined with the extract of Conium, in chronic Pertussis. The muriate of Ammonia has been highly praised by some practitioners. We can confidently recommend the Liquor Potassæ in any bitter tea: the infusion of Calumba is a good vehicle.

The article on *Injuries of the Chest* does not admit of notice, as it consists entirely of cases without any accompanying remarks.

Our readers will agree with us, we doubt not, in regarding the present Number of these Reports as a very good one. *Vale et Perge* we would say to the talented editors.

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Memoires de l'Academie Royale de Medicine. Tome XI. 4to. pp. 800. Paris, 1845.

Although the present volume of the French Academy Memoirs is inferior in interest to some of its predecessors, and contrasts disadvantageously in practical value with our Medico-Chirurgical Transactions, yet it contains much well worthy of the attention of our readers. There is the same fault in it that characterises almost every work issuing from the French medical press—inordinate diffuseness. Paper and print had indeed need be cheaper on the Continent than with us, but, unless a book is to be considered valuable in proportion to the number of words it contains, it is an unfortunate circumstance for the reader that they are so. Casting aside the

endless repetitions, the circumlocutory verbosity, and the irrelevant observations, which disfigure them, there can be no doubt that both author and reader would gain vastly by the compression of any of these works into one-third of their compass. Certainly the present volume would gain by the process.

Passing over the eulogia upon the deceased members of the Academy, and a comparative view of the recent progress of Medicine and Surgery in France, we come to the consideration of the various Cases and Memoirs.

## A MEMOIR ON URETHRO-PLASTIE. By M. *Segalas.*

M. Segalas, in a letter addressed to M. Dieffenbach in 1840, stated his opinion, that the attempts at reparation of a breach of substance of the urethra had hitherto failed in consequence of the contact of the urine with the parts concerned not having been prevented; and, at the same time, detailed the particulars of a case in which, this latter object being attained by making a preliminary incision in the perineum, and introducing a catheter through it into the bladder, a complete cure resulted. A second case was similarly treated by M. Ricord, and a third forms the subject of the present communication.

This patient, aged 30, exhibited a large loss of the spongy portion of the urethra, the consequence of gangrene supervening upon a ligature he had attached to the penis when a child. The urine and seminal fluid passed entirely by this aperture, which was an inch in length, and occupied the entire thickness of the urethra, a deep transverse cicatrix being observed also to surround the corpus cavernosum. The portion of the urethra anterior to the loss of substance was much narrowed, but easily admitted a probe, and when the patient approached the two orifices of the defective portion he could force urine through it. The operation was divided into three stages; in the first, the prepuce, which was phymotic, was divided, in order to relax the parts afterwards to be operated upon. Six days after, a free opening was made into the membranous portion of the urethra, and a gum-elastic catheter introduced. The urine thus being prevented coming in contact with the canal, and the parts being in a tranquil state, the operation was completed, three weeks after the first incision of the prepuce, by dividing the edges of the defective portions of urethra and bringing them into contact over a bougie by means of the twisted suture. The wound healed kindly, except at one minute point, which remained fistulous for a very long period, notwithstanding the application of various cauteries, &c. It however eventually completely healed, though not until its orifice had been incised. The operation was performed the 18th August, and the catheter removed from the perineum the 26th November. Dieffenbach had objected to this operation, that the wound made in the perineum might itself remain fistulous. Such has not been the case in the other cases reported, and in the present one, it closed in a few days after the removal of the instrument. Although perfectly able to evacuate the bladder by the urethra, the patient was recommended to do so for a considerable time by means of a catheter. Throughout the treatment of the case, neither fever nor irritation manifested itself.

## ON MENINGEAL APOPLEXY. By Dr. *Prus*.

Dr. Prus enters, in this memoir, into a comparison of the two different forms of this affection, that in which the hæmorrhage takes place into the cavity of the arachnoid, and that in which the blood is effused between the arachnoid and the pia-mater. His position as physician to the Salpêtrière, where so many aged persons are admitted, has afforded him more opportunities of observing these cases than fall to the lot of most practitioners. He observes:—

"Affections of the serous membranes play a great part in the pathology of old age. It would seem that the diminution of cutaneous perspiration determines in the serous membranes, as well as the pulmonary mucous membrane, a more abundant exhalation, and frequently also an afflux of blood which predisposes them to phlegmasiæ and hæmorrhages. These phlegmasiæ should the more attract the attention of the practitioner, inasmuch as they often progress in a latent manner, and may become fatal in a very few days. This observation applies especially to the pericarditis and meningitis of the aged. In a forthcoming memoir I shall occupy myself with this subject, as important as it is little known. Hæmorrhage from serous membranes, although less frequent than their inflammation, is yet by no means rare. I have observed it in the peritoneum, the pleura, the pericardium, in the cerebral and spinal arachnoid, in the cerebral ventricles, and in the infra-arachnoid cavity. The hæmorrhage into the arachnoid cavity, and into the vascular tissue of the pia-mater, known by the name of *meningeal apoplexy*, is that which will engage my attention to-day."

Although this affection has obtained its present name only since 1819, when Serres distinguished it from hæmorrhage into the cerebral parenchyma, yet Morgagni has left us observations of almost all its varieties. Since Serres wrote, numerous practitioners, as Rostan, Blandin, Abercrombie, Andral, &c., &c., have published interesting cases. M. Boudet, in 1840, produced an important monograph upon the subject, in which he collected 41 cases observed by himself and preceding writers. He has completely proved that the coagula found in the parietal arachnoid are not, as stated by many writers, placed between the arachnoid and dura-mater. Their enclosure in a pseudo-membrane has given rise to the error. Dr. Prus details the particulars of 16 cases, all but one being corroborated by careful post-mortem inspection. In six of these the hæmorrhage was seated between the arachnoid and pia-mater. In nine others blood was found, either in a fluid or coagulated state, in the cavity of the arachnoid itself.

In the *sub-arachnoid variety* the blood is found, either fluid or coagulated, on any part of the surface of the brain or spinal marrow, being separated from the nervous substance by the pia-mater only, which is even sometimes penetrated. When the effusion is very considerable it is found at the base, and is generally due to the rupture of an artery. Only three cases of rupture of the sinus, recorded by MM. Serres, Douglas and Felassier, are known. It is this form of the disease alone which results from the rupture of an artery or considerable vein, although it may, as the other form, be also produced by exhalation. However long the effusion may have existed prior to death, it has never been observed, as in the other variety, to become enveloped in a false membrane. If the name *apoplexy*

were confined to cases in which paralysis of motion and sensibility existed, these cases could hardly be so termed: for, of twelve recorded, as resulting from rupture of cerebral arteries, in two only hemiplegia existed. Coma has been the only symptom constantly observed by the author. No cyst, indicative of absorbed effusions, has ever been detected.

"The term *sudden apoplexy*, which can perhaps never be justly applied to hæmorrhage into the cerebral pulp, or even into the cerebellum and protuberance, is admissible on the other hand, in a certain number of sub-arachnoidean hæmorrhages. Cerebral congestion, or *coup-de-sang*, serous apoplexy in the ventricles and sub-arachnoid cavity, hæmorrhage into the sub-arachnoid cavity and ventricles, alone merit, and that only in certain cases, the name of sudden apoplexy."

Dr. Prus observes that, it might seem at first sight that an effusion of blood would produce the same effects, whether occurring within the cavity of the arachnoid, or between this membrane and the pia-mater; but, in point of fact, two diseases result, differing in their anatomical characters, symptoms, progress, termination, and treatment. The following are some of his conclusions upon this point:—

"*Anatomical Characters.*—In one-half the cases at least, hæmorrhages between the arachnoid and pia-mater arise from arterial or venous rupture, while in the intra-arachnoid apoplexy the blood is never effused but by exhalation. In the sub-arachnoid form the blood mingles with the cephalo-spinal fluid of the ventricles and spine, to which it may convey irritating properties, as well as discoloration. In the other form it has no communication with this fluid. Blood effused beneath the arachnoid never becomes covered with a false membrane, while that contained within its cavity always does, if it have remained for four or five days. In the sub-arachnoid form, even where the hæmorrhage has been intermitting, sufficiently distinct differences in appearance and consistence of the coagula do not exist to enable a difference in their age to be determined. This, in many cases of intra-arachnoid hæmorrhage, can be done. So in the former case the effused blood does not become adherent to the walls of the membranes, which it does in the latter. Observers have met with cysts in the cavity of the arachnoid containing blood or traces of blood, and which they have regarded as processes of cure; but these have never been discovered in the other form.

"*Symptoms.*—In sub-arachnoid apoplexy paralysis is a very rare occurrence, it having been observed only three times in twelve cases of rupture of arteries, and never in those in which the blood resulted from rupture of the sinuses, or from exhalation. In six out of eight cases of sub-arachnoid apoplexy there was paralysis of motion. That of sensation is much more rare. In none of the six cases of sub-arachnoid apoplexy was there any sudden loss of consciousness, and in three instances out of eight of the intra-arachnoid form only did this occur. Somnolence and coma have shown themselves nearly constantly towards the termination of both diseases; but in the sub-arachnoid apoplexy, these symptoms are usually only preceded or accompanied by uneasiness, feebleness, redness and heat of the face and head; while, in the intra-arachnoid apoplexy, there is almost always observed cephalalgia, dry tongue, fever and delirium—symptoms due to the presence of inflammatory action.

"It is a remark well worthy of the attention of the practitioner that blood effused, even in large quantities, beneath the arachnoid, may diminish the intellectual powers, but it does not pervert them; *i. e.*, it does not cause delirium; while on the other hand, it is rare for blood to be effused for more than four days in the cavity of the arachnoid without inducing it. It is about this time that the coagulum becomes covered with a false membrane."

The essential symptoms of apoplexy of the cerebral pulp, sudden loss

of consciousness and the production of paralysis, are thus not always present in the meningeal form. In fourteen cases the deviation of the mouth, so common in ordinary apoplexy, has been observed but once. The persistence and intensity of the somnolence and coma constitute a principal characteristic of the meningeal form. Sub-arachnoid apoplexy has not been known to continue longer than eight days; but the duration of the intra-arachnoid form may be a month or more; or, as cysts found long after the period of effusion prove, it may now and then be cured. To this end the author recommends vigorous and sustained antiphlogistic treatment in this form of the disease.

## ON ŒDEMA OF THE GLOTTIS. By *F. Valleix*.

The Academy of Medicine proposed the following subject for their prize. *State the causes of œdema of the glottis, describe its progress, successive symptoms, and differential diagnosis. Discuss the advantages and inconveniences of tracheotomy in its treatment.*

Prior to the proposition of this question the attention of M. Valleix had been drawn to the subject during the composition of his much esteemed *Guide du Medecin Pratique*. Although œdema of the glottis was described by Bayle in 1808, its right of reception into our nosologies as a distinct affection has been frequently contested; and certainly of the forty recorded cases collected by M. Valleix for the present essay, there are several to which this designation can be ill-applied. Indeed, as will be shortly seen, the description of our author embraces all inflammatory affections of the upper orifice of this tube capable by their resulting depositions of obstructing the admission of air. Practically this is of little consequence, since the same principles of treatment are applicable. He adds three cases from his own practice, and refers to two occurring in children, as reported by MM. Rilliet and Barthez in their work reviewed in our present Number. To proceed with our analysis.

*Anatomical Lesions.*—The author finds the cases in which the infiltration consisted of serum only to have been comparatively few in number, in three-fourths of those recorded pus existing also. The cases of simple infiltration generally arose in the progress of a general anasarca, as in that supervening upon scarlatina. The folds of the mucous membrane extending from the epiglottis to the arytenoid cartilages are especially the seat of the disease; and in three cases only have the *cordæ vocales* themselves been noted as presenting a certain degree of infiltration. The quantity of fluid effused is sometimes sufficient to produce enormous tumefaction, but few observers have supplied any exact details upon this point. The superior orifice of the larynx then presents two roundish pads, more or less projecting, and, according to their size, offering a greater or less obstruction to the passage of air. They have a tendency to sink down into its aperture, when the larynx is open, and thus, as M. Lisfranc proved by experiments with a bellows, air obtains a far easier egress than ingress, the pads separating in the first case, and approaching each other when air was forced from above downwards. In three cases only has the *mucous mem-*

*branæ*, near the infiltration, been found in a healthy condition. In a third of the cases it was red, and in a sixth ulcerated. In one case there was ramollissement, and in another gangrene. In sixteen cases more or less serious lesions of the *cartilages*, especially the cricoid, were found—the infiltration in fact being produced in consequence of the inflammatory action of the mucous membrane, induced by the carious, or other diseased state of the cartilages. The *epiglottis* was infiltrated in four cases, and in eight it was notably thickened. In one case it was ulcerated, and in another covered with a false membrane. In more than half the cases lesions of the *pharynx* were observed, such as coloration, ulcers, or abscess. It thus appears that œdema hardly if ever occurs without being preceded by organic lesions of the adjacent parts.

*Causes.*—The *exciting* causes are therefore the lesions just alluded to; but the *predisposing* ones have for the most part been imperfectly observed by authors. Age seems to exert some influence. Of 38 cases, four only occurred in children less than ten years old; and the greatest number were observed to occur between 18 and 30—the period in which phthisis, the most frequent cause of ulceration of larynx, so often the precursor of œdema, is most prevalent. So, too, this is especially the age for typhoid fever, during the convalescence of which œdema glottidis often occurs. The *sex* has been observed in 40 cases, of which 29 were males and 11 only females. This does not militate against the statement of phthisis being so frequently a predisposing cause; for, although that disease is most prevalent in women, M. Louis has observed that ulcerations of the air-passages are three times more frequent in men than in women. The effects of temperament, constitution, and seasons, have been too seldom observed to allow any conclusions concerning them to be drawn. As to the *prior state of health*, in 4 cases out of 40 only did the disease show itself as a suffocative angina, the patients being in good health at the time. In ten instances the affection appeared in the course or convalescence of typhoid, or other severe form of fever; and in 12 in the course or convalescence of various other diseases, as pneumonia, scarlatina, erysipelas, &c., &c. In nine cases it followed laryngeal phthisis, in one cancer, and in two syphilis of the larynx. In two cases the state of health was not indicated.

"When an inflammation is developed within, or only even near to, a part of the body where there is abundance of cellular tissue, we soon observe it become more or less engorged with serum or sero-purulent fluid, according to the violence of the inflammation. This is seen to be the case in the subcutaneous cellular tissue in inflammation of the skin; as also in the palpebral cellular tissue, when there is inflammation in the vicinity of the eye, or in the eye itself. This is also seen after a simple section of the prepuce, when the cellular structure often becomes infiltrated in a very notable manner. This effect may be observed in subjects otherwise in good health, but it is much more frequently produced when they have been enfeebled by prior disease, and the blood has become impoverished; or there is a tendency to general œdema. We find here an explanation of what occurs in the larynx when a violent angina affects a healthy subject, and when even a slight angina, having its principal seat in the larynx or pharynx, attacks a subject affected with, or convalescent from, another disease. But to pursue the comparison: if an ulcer is developed with a certain degree of

irritation in one of the portions of the body already mentioned, its edges are seen to swell, and the irritation spreading farther and farther, the neighbouring cellular tissue is infiltrated. This effect is remarked in chronic ulcers, when by some cause they become much irritated, as well as in acute ulcers. The same thing is seen passing around an abscess, whether a simple one, or one connected with caries of bone. In studying the facts I have now indicated, one may see, so to speak, demonstrated on the surface of the body, the various phenomena which terminate by producing the serous or sero-purulent infiltration of the larynx, and further, we see the reason of the predilection the œdema assumes for the aryteno-epiglottic folds of mucous membrane, the cellular tissue being here much less compact than elsewhere."

*Symptoms.*—Pain and tenderness in the region of the larynx or pharynx, with or without difficulty of deglutition, has been noticed in nearly all cases. The *cough* and *expectoration* have frequently not been even remarked upon by authors, and are only of a secondary importance. The change of *voice* is a very frequent, if not constant sign. "It is at first raucous, then marked, then low, becoming in most cases extinguished, or almost so, towards the end of the disease. In one case alone it has been designated as croupal." Although *dyspnœa* is usually a principal symptom, it is in some cases not very marked. In 35 cases out of the 43, however, it has become at times suffocative. As observed by Bayle, the difference of the difficulty in inspiration and expiration is frequently very great, the former being far more noisy and laboured than the latter. In most cases, the inspection of the *fauces* seems to have been neglected; but in all the 13 in which they were examined, lesions of the pharynx, to a greater or less extent, were observed. It is, however, sometimes difficult to get the mouth sufficiently open. The examination with the finger, too, seems to have been seldom practised, although, in those cases in which it has been done so adroitly, the tumefaction of the glottis has been felt satisfactorily. The digestive organs are not usually much disturbed, but there is great fever, thirst, and restlessness. The countenance exhibits marked change, especially during the paroxysms.

*Progress and Termination.*—The debut of the disease is hardly ever sudden, but once developed, it is often very rapid in its progress. When it results from a chronic lesion of the pharynx, its first announcement may be a suffocative paroxysm. When it is produced by simple inflammatory action the progress is rapid in proportion to its intensity, and it is then more uniform and less interrupted in its progress. In lesions of the larynx the paroxysms are more distant, and separated by intervals of calm. In some cases the paroxysms are truly dreadful to behold, of frequent occurrence and long duration. Of the forty cases alluded to, only nine were cured. Three only died during the existence of the paroxysm, and seven during a calm interval, in which all seemed going on well. In the other cases, death, although not actually occurring during the paroxysm, did so in the condition of asphyxia, which had become permanent. One perished during the operation of tracheotomy, one ten hours, and another fifty-two hours, after its performance. The *duration* of the affection is very variable as the circumstances attending it are so different; and death at periods varying from a few hours in one case, to twenty-six days in another, has been observed

*Diagnosis.*—This, which would seem easy enough, has nevertheless in some cases been attended with difficulty. If, with the precursory symptoms, already mentioned, and paroxysms of suffocative dyspnœa, we are able to feel an œdematous swelling at the top of the larynx, by means of the finger passed rapidly into the mouth, this being widely opened, the diagnosis is almost certain; not quite, indeed, for tumors, in the vicinity, have simulated these œdematous swellings, as may collections of matter in the pharynx or œsophagus. Other affections of the larynx itself may render the diagnosis also obscure, as laryngitis terminating in suppuration, the seat of the formation of matter being the posterior walls of the larynx, and generally just above the cricoid cartilage. In one such case only was the pus found in the aryteno-epiglottic folds—the usual seat of œdema. The suffocative paroxysms in this case are much less severe. In *false croup*, we observe that children are almost always the subjects, the symptoms nearly disappear in the intervals of the paroxysms, when the voice becomes almost natural, and no tumefaction is found on the exploration of the larynx. In *croup*, children are also the subjects, and false membranes are usually found in the pharynx. The only pathognomonic sign of œdema is however the presence of the œdematous tumours at the superior aperture of the larynx. Œdema glottidis is sometimes *latent*, and M. Louis reports two or three cases in which the symptoms did not manifest themselves until just prior to death—these patients being already brought into a dying state by the severity of other long-continued disease.

*Prognosis.*—This is of the gravest character, since whatever is done almost all die. The less the lesion which has given rise to the œdema has disorganized the tissues, the more chance there is of a cure being effected, if active means are employed.

"In pronouncing upon the degree of gravity from the symptoms observed, each case must furnish its own elements for decision. In a general manner only we can say that if the strength yet continues, the pulse is regular and strongish, if the features are not much changed, and the face not livid, if the efforts to enable the air to penetrate into the lungs are yet energetic, and if the wheezing or other noise is heard in the larynx with power enough to show that the air does, although with difficulty, penetrate into the lungs, we may have hopes that the disease will terminate favorably. If, on the other hand, the patient is prostrated—if his features are changed, his lips blue, his eyes haggard, his face cadaveric, as described by Bayle, if he has no longer the power of making the same respiratory efforts he did before, if the inspiratory *sifflement* has lost its energy, without respiration becoming deeper and easier, we must not allow an apparent and deceptive calm to deceive us; for the patient is devoted to a speedy death."

*Treatment.*—Of the whole number of cases collected, nine only were cured. General *bleeding* has been only put into force in seven cases, in some of which it has produced at least temporary benefit. Leeching has been tried in fifteen cases, and in the same number have *blisters* been applied to the neck. In two cases related by the author, *blisters* and *emetics* have been simultaneously employed, and a cure resulted in both. In the one, the œdema came on in the course of a syphilitic laryngitis. Emetics were given, a large blister applied to the neck, and two others to the thighs. In the other case the œdema came on in the course of phthisis. Incision,

or tearing of the œdematous tumours, and thus lessening their size, has been advocated by some; and the operation of *tracheotomy* by others. Of the 40 cases here reported, this has been practised but nine times, and in three of these life was saved. It must be remembered that the operation has been delayed until the last moment, when asphyxia was imminent, and yet out of the nine cases it has succeeded three times; while in the 31 remaining cases six cures only have resulted. Moreover, in only one case was the disease simple and primary, the others occurring in the course of an acute disease or of chronic laryngitis. To be successful the operation must not be delayed until the last moment, but should be put in force as soon as other methods have been found unsuccessful; but it should not be performed in those patients in whom the original disease is about terminating their career.

## ON HEREDITARY INFLUENCE. By M. *Gintrac.*

This paper, upon the "Influence of hereditariness in the production of nervous excitement and the diseases which result from it," occupies nearly 200 pages. The matter it contains might easily have been condensed into a tenth part of that number with advantage, and even then would be found to contain little enough novel or conclusive. We content ourselves with extracting the account of the prevalence of hereditary predisposition as a cause of *Insanity*.

M. Parchappe found, as a result of examining the records of the Lunatic Asylums in France, that of 14,362 admissions, in 1,632 instances, the madness could be referred to hereditary influence. The proportion varied much in different establishments, as from 35 per cent. in M. Esquirol's private asylum to 21, 15, 13, 11, or 10 per cent. in the public asyla. M. Gintrac has furnished additional figures derived from a variety of domestic and foreign establishments, and which, united with those of M. Parchappe, shows that hereditary influence has prevailed 3,268 times in 24,012 cases, giving the mean number of 13 per cent. Alluding to the tables quoted, he observes:—

"We may remark the great differences in the results obtained according to the places and observers. In hospitals information is often wanting. It is usually impossible to prove this exactly in patients whose judgment is disordered, and in whom it would be imprudent to direct attention to the causes of their insanity. The relatives have ordinary motives for silence as regards antecedents. It requires a great perseverance, a very strong love for the truth, and a patience beyond all proof, to engage in this description of research, and to obtain exact and circumstantial information. Thus it is no wise astonishing that, in hospitals where the importance of this kind of examination has not been appreciated, there has been so low a figure as at Aversa, (1 per cent.) while in other establishments it has mounted up to 50 per cent. In the establishment of Esquirol, in the cases of lypemania and of puerperal mania which he has reported, the number of cases of hereditary influence is much more considerable than at Bicêtre or Salpêtrière, because the observations were collected with more care and more details than in those houses where the multitude of the patients rendered their examination less attentive and less complete. It is rather on this account than

because of the difference of social position that hereditariness seems seldomer to manifest itself.

"According to Esquirol, insanity is oftener transmissible by the mother than the father. He has been enabled to assure himself of this, during his attendance upon, in the latter years of his life, the children of those who had themselves been his patients at the commencement of his career. * * * Esquirol believes that children, begot prior to the invasion of the disease in the parents, are less subject to it than those who are born afterwards. Whatever may be my respect for this celebrated observer, I cannot admit this entirely, unless in reference only to accidental insanity. For, if the affection is the result of a constitutional predisposition, it little matters whether this is transmitted before or after the fortuitous manifestation of its consequences. It is not the disease itself which parents communicate; for a child is not born mad, but only with the aptitude of becoming so. Now such aptitude may remain latent for a longer or shorter time, by reason of the absence of causes capable of bringing it into action. Thus we may see it traverse one generation without exhibiting itself, and become evident in that which succeeds. A curious example of this may be taken from the observations of Grube. A father, the subject of mental derangement, had sons of distinguished talent who filled public employments with ability. Their children first appeared to possess sound minds, but at 20 years of age they exhibited signs of insanity.

"It is not only individuals manifesting a well-characterised mental alienation who impress upon their posterity a vesanic disposition. Persons of a light, mobile character and capricious disposition, whose ideas are eccentric, tastes depraved, and passions excited, those who are accustomed to debauch and drunkenness, often produce children who, by increase of these unfortunate dispositions, become completely insane."

Of the various forms of *Monomania* some are far more frequently produced by hereditary predisposition than others. This is especially the case with *Suicide*, as has been observed by most writers upon insanity. Of twenty examples collected by M. Falret, five were found hereditarily predisposed, and of 81 collected by M. Cazauvielli, between 1804 and 1833, the same was the case in 22 instances; and frequently, when even suicide has not prevailed, there has been some marked peculiarity of disposition or manners in the predecessors. These observations were made not only in towns but in rural districts, and Zimmerman notices a village in Switzerland, in which there was not a family that had not lost some member by voluntary death.

## THE NATURE AND DEVELOPMENT OF ACCIDENTAL PRODUCTIONS.
By *Ch. Baron*, M.D.

This communication is part of an entire work upon the subject to which it relates, presented some time since to the Academy. That portion of it which relates to *Tubercle* has already appeared in the Archives Generales de Médecine, for 1839.

Before considering any of their varieties in detail, the author first states his reasons for considering *all accidental productions are of an identical nature and origin.*

1. *The frequent similitude of anormal tissues.*—This is sometimes so

great, in some of the intermediate stages of morbid growths, that one is with great difficulty distinguished from another. Thus we may be at a loss to decide whether certain visceral changes should be referred to unsoftened encephaloid, to scirrhous, or to fibrous tissue. The same may often be observed in respect to tubercle and encephaloid in a state of crudity. In some organs the difficulty is greater than in others, and, as M. Cruveilhier observes, nothing is more difficult than the classification of tumours of the brain.

2. *The mutual Transformations which are sometimes operated among some of these productions.*—Thus pus may be converted into a false membrane, cancer into pus, hydatids into tubercle or cancer, cartilage into bone, and tubercle into stony concretion.

3. *Their simultaneous Appearance.*—The author does not agree in the opinion still held by some observers, that different morbid tissues exclude each other. Different morbid products may be observed in different organs, in the same organ, or even in the same tumour. One accidental production may even be developed within the interior of another: *e. g.*, tubercles within the substance of false membranes.

"4. *Their Analogy of Structure.*—The masses in all these productions are constituted of small tumours, which we may call initial, and which, in most instances, approach the spherical form. They are formed of various superimposed layers, which seem to converge towards the centre. Frequently the colour and density are not alike throughout the extent of the tumour, the centre being usually the least consistent part. Around accidental tumours is a vascular net-work, whence branches are sent into their substance in which many are lost, and frequently, in following the vascular ramuscules which penetrate the morbid tumour, we observe they terminate in one of the little granules, the assemblage of which constitutes the mass."

5. *Their Organization and Vitality.*—The majority of these productions are organized, and thus may undergo changes in volume, suppuration, &c. Their vitality, which is restricted, and not alike in all, is due to the vessels which supply them with the material of their nutrition, and maintain their relation to the general circulation.

6. *The Analogy of their Development.*—Most productions are first visible as white or yellowish-white points. Their consistence increases faster than their volume or colouration. This is their period of crudity, which is wanting in some, as pus. Sooner in some than in others the period of softening occurs, commencing in the centre. A more minute inspection shows that, in the earliest stage of their existence, the greater part of these productions are in the fluid state.

7. *The Analogy of Seat.*—Organs well supplied with vessels are those which are liable to accidental productions, and it is in their most vascular portions that these are developed. They are not found, however, in the vicinity of the large, but in that of the small vessels; *e. g.*, it is not in the vicinity of the roots of the lungs that the morbid productions of these

organs are deposited, while it is the cortical substance of the kidney that is affected with granulations.

8. *Their Generalization.*—The disposition to this is so great, that one may almost say it is more common to find several simultaneous dispositions of a given accidental production than to find one only.

9. *The Condition of the surrounding Tissue* is nearly alike in all. During the period of crudity, the fibres of this undergo only slight separation and compression; but during the period of softening, it offers the characters of chronic inflammation. The morbid product, at the period of its origin, is surrounded by an areolar injection, which has been erroneously considered inflammatory. Sometimes the neighbouring vessels are found to contain more or less coagulated blood.

10. *The Analogy of Symptoms.*—The local symptoms, depending on the obstruction the deposit causes in the organ, are very similar in the various accidental productions, and these cannot be distinguished from each other by their names. The general symptoms, especially manifesting themselves during the period of softening, although they occur at different stages of the disease in different cases, bear a great resemblance to each other, and are especially characterized by the exhaustion of the powers of the frame.

11. *The Ætiology is frequently the same*, as shown in the effects of hereditary influence, inflammation, congestion, contusions, &c.

12. *The Chemical Composition* is remarkably similar—the differences being almost wholly due to the varying proportion of the same elements.

"The reasons which I have now assigned seem to me to sufficiently prove the identity of the origin and nature of accidental productions. What I wish now to show is *the identity of non-analogous morbid productions and of analogous morbid productions.* The propositions above enounced nearly equally apply to these two classes of productions, and we may refer especially to the frequent simultaneous existence of analogous and non-analogous degenerescences. Thus, one often meets with, in the same subject, and often in the same tumour, encephaloid matter, tubercular and osseous, scirrhous and fibrous tissue. Considering then these analogous and non-analogous productions identical, it results that the origin of morbid tissue is the same as that of the normal tissues. It is indeed impossible to deny that accidental cellular and tendinous tissue is identical with normal cellular and tendinous tissue, and as we admit the analogy of the analogous and non-analogous morbid products, we must admit the community of origin of normal and anormal tissue. Professor Bouillaud observes, 'the laws which preside over the formation and development of the anormal tissues are but modifications of those to which the formation and development of normal tissues are submitted.' This analogy is further proved by the vascularity and evident organization of the accidental productions, their participation in the general modifications of the organism, and their vitality."

Trousseau and Leblanc, and others, have referred the origin of these productions to a *sub-inflammation;* but no inflammatory process is usually set up around them unless and until softening occurs, and, if it existed, would produce very different results, accordingly as these productions were

situated in one organ or another. The opinion of Cruveilhier, that they are due to a *phlebitis*, because coagula are sometimes found in adjoining vessels, is not more tenable.

These anormal tissues are generated from the *blood*, and therefore an afflux of this fluid, or even in some cases inflammatory action, is favorable to their production. It is difficult to go beyond mere hypothesis in stating how these changes in the fluid are affected. However, the development of certain products from effused and coagulated blood has been observed. "We see the blood arrested in its vessels or effused into the tissues, and the resulting coagula themselves induce a true secretion, a separation of the elements necessary for the formation of the morbid production. Certain elements of the blood disappear by absorption, and others are subjected to successive transformations, whence result the anormal products." The names of Abernethy, Forget, Andral, and Piorry, are cited in proof of this generation of anormal productions in coagula.

*Encephaloid Matter.*—After describing several autopsies, in which the gradual conversion of a coagulum into encephaloid matter was observed, the author thus sums up his observations:—

"In a great number of cases a coagulum is deposited in the organic tissue, or is yet contained in the vessels. The serum is first absorbed, and the colouring matter is removed, the concretion becoming fibrinous, yellowish, then whitish, and augmenting more and more in consistency. The matter then becomes smooth and lardaceous like dense cerebral matter, a slight rose colour pervading it. The degeneration is usually more advanced as we approach its centre, so that sometimes the encephaloid matter is completely formed and even softened at the centre, while the circumference is yet constituted of fibrinous blood, or of blackish red blood, the consistence of gooseberry jelly. At a later period, the external layer of the production may become converted into an enveloping cyst, or may act as a partition in a mass when many tumours are conjoined. The cyst is often however formed of the cellular tissue of the organ in which the tumour is deposited.

"The mass increases by the addition of new material which the numerous vessels that traverse it supply, by the conversion into encephaloid of the effusions of blood which occur in its various portions, especially towards its centre, and after by the union of many neighbouring tumours."

After offering a similar explanation of the origin of *colloid* or *gelatinous cancer*, the author next presents several observations upon

*Hydatids of the Lungs and Pulmonary Apoplexy.*—The blood effused into the texture of the lung, constituting pulmonary apoplexy, when not absorbed, may undergo great change. The most excentric layer of the effusion may have undergone absorption, leaving a yellowish intermediate layer containing blood in its cavity. Sometimes, as this fluid internal portion of the blood disappears, this yellow envelope contracts and remains a persistent cicatrix. In other cases, the fluid is removed from the centre by communications with the bronchi, or by the interior of the envelope taking on the secretory action, and a hydatid cyst is left, which becomes lined with a smooth polished membrane, and filled with a serous fluid.

"I add, as a proof in support of this mode of the origin of hydatids, that a common cause of their development is a fall or shock, such as may produce a

commotion and effusion of blood in the organ which contains them. Further, we often see morbid tumours constituted at once of serous sacs and of other accidental productions, due generally, as I believe I have shown, to the transformation of the effused blood. This simultaneousness of development in the same parts of the economy seems to prove that the acephalocysts and other accidental productions have a common origin. Lastly, as M. Berard states, it is in the spongy portion of the long, and the diploe of the flat, bones, *i. e.*, in the most vascular portions, that hydatids ordinarily develop themselves. So too, within the cranium, it is chiefly near the pia-mater, the vascular network enveloping the brain, that hydatids arise, and especially in the fissures, in which are lodged the principal arterial branches.

"To those who may feel surprized that the most excentric layers of a coagulum should be connected with an hydatid cyst, non-adherent to the cavity containing it, I may answer that the walls of the acephalocyst possess all the properties of fibrine and albumen, and that, since the work of Legroux on Sanguine Concretions, it is impossible to doubt that a coagulum may be converted into a cyst; and that M. Bouillaud, among many other authors, cites numerous enough examples of coagula being so converted into simple or compound cysts. We must not regard the transformation of the pulmonary apoplectic deposits as a fiction drawn from a rational induction, but as a fact resulting from observation; for, as cerebral apoplectic *foyers* are frequently converted into serous cysts, the occurrence of the same thing in the lung can hardly be disputed."

*Melanosis.*—After citing the observations of several authors, to prove that melanosis is produced by a transformation of the coagulum of the blood the author observes:—

"The chemical composition of melanosis has thrown much light on its nature. All chemists who have analyzed this matter have remarked its great analogy to the blood. It is seen, by the analysis I have given above, that fibrine, albumen, oxide of iron, and many salts, are found in it in notable proportions, and very similar to those which exist in the blood. But there is a principle to which we must direct some attention, namely *carbon*, which is found so abundantly in melanosis as to constitute one-third of its substance. As this principle only exists in small proportion in the blood, a supplementary quantity must be formed to constitute melanosis. The proportion of carbon is probably not the same in all melanoses, being feebler in those which are soft and reddish brown, than in those which are black, dry, and dense. It is easy to prove that melanosis is constituted by the combination of most of the elements of the blood with a considerable quantity of carbon, but it is not so to discover the origin and mode of formation of this carbon. According to MM. Barruel, Foy, Trousseau and Leblanc, the cruor is the only element of the blood whose change can furnish it. This theory of its origin is a rational one. Nevertheless, I believe carbon may also be derived from other sources. Thus, in the lungs, a portion may be derived from the chemical act of respiration. A part retained in the lungs mixes with the blood, whose coagulation it produces, and from its mixture with this coagulated blood, results the melanosis. The carbon of pulmonary melanosis may also be in part produced by the combustion of bodies employed in artificial illumination."

*On the Black Pulmonary Matter.*—The author in concluding his paper details the usual appearances which the deposition of the black pulmonary matter presents. It is found at the surface of the lungs, either in the form of mere points, lines, or superficial layers. On examining the interior of the organ, points and lines of black substance are found chiefly in the interlobular tissue and augmenting in size as they approach the roots of

the lungs. Most of these become continuous with small vessels which have exactly the appearance they would have if injected with some solidified black matter. In the bronchial glands at first a black point is observed, then layers of black matter, and at last a sort of general infiltration, which hardly allows the normal tissue to be distinguished. Sometimes it is deposited in amorphous masses.

Dr. Baron considers this black pulmonary matter to be primarily deposited within the bronchial veins; and that its presence in ripe and advanced age is one of the causes to which the diminution of the respiratory powers may be attributed. He regards it as coagulated blood conjoined with carbon. The coagulation may be produced by the presence of carbon, which may be derived from the chemical act which constitutes hæmatosis, and from the combustion necessary for artificial illumination.

## On the Acute Delirium observed in Establishments for the Insane. By *Brierre de Boismont*, M.D.

Dr. De Boismont, having related several cases of this affection at considerable length, next proceeds to give a general view of its principal characteristics.

*Symptoms.*—The delirium in these cases does not usually show itsel suddenly, but the patient, for some time prior to its occurrence, manifests a change of character, habits, and tastes. Naturally of a placid disposition, he becomes morose, quarrelsome, prodigal, covetous, &c. Persons who have manifested great indifference to religion may become minutely attentive to its observances, while others, to whom such was habitual, now neglect them. Some persons exhibit great volubility of speech and others an incoherency of ideas. Such precursory signs having existed for days, weeks, months, or even years, the delirium at last exhibits itself. The ideas now seem to come and go without order or relation to external objects, and often succeed each other with a rapidity it is impossible to follow. The nearest relatives cannot excite the attention of the patient, or obtain replies to the most urgent questions. The paroxysms are often of the most violent character, the delirium frequently, however, revealing some predominant idea, and that of a desponding character, especially in those of a religious turn. The violence of the delirium is sometimes interrupted by more or less completely lucid intervals. There is a peculiar mistrustful and sinister expression of countenance generally observed. There are two well-marked stages of the affection, that of excitement and that of succeeding exhaustion. The period of their respective duration is very varying, the debility sometimes coming on in a few hours and at others not until just before death. At the commencement of the affection the patient is in constant motion, often displaying immense muscular power, and generally requires, for the preservation of those around him, to be secured. Frequently, various of the muscles are powerfully convulsed, so as sometimes to amount to complete epilepsy. Grating of the teeth and spasm of the œsophagus are especially observed. Some patients, however, remain motionless from the commencement, as if a prey to the deepest melancholy.

Paralysis, either general or local, which is one of the symptoms of meningitis and encephalitis, is not found, or very rarely so, in acute delirium.

At an early stage of the affection the moans and cries of these patients are so loud and penetrating that it becomes necessary to place them at the greatest distance from other patients. Their shrieks usually diminish as the malady advances, but not always. Some of the patients are tormented with hallucinations and illusions, but the most characteristic symptom in this affection is a *hydrophobia*, or aversion to liquids. Sometimes this arises at an early, sometimes at a later stage, but the savage energy with which attempts at giving drink are resisted can hardly be conceived.

"This refusal of drinks may continue for several days, and it is common to observe patients who have drank nothing for 24, 36, or 48 hours, and even for three, four, five, or six days. We had under our care a lady who, for twenty days, took no liquid but by means of an œsophagus-tube. This symptom offers more or less marked remissions. Patients who had refused all liquids, consent to drink at a time when they were least expected to do so. In the greater number of cases the hydrophobia diminishes with the progress of the delirium. The symptom may, however, persist during the whole course of the disease, being generally remittent and sometimes intermittent. A protestant minister had six attacks of acute delirium, with refusal of drinks each time. Among facts of this kind we may cite the following:—a young lady drank the first day with avidity; the second day there was less thirst, the third day, after some hesitation she obstinately refused to drink at all. During three days she took *tisanes*, or rejected them with rage; the seventh day she drank all that came before her; the eighth day nothing could persuade her to take any fluid. She gnashed her teeth in fury when a glass was presented, and buried herself under the bed-clothes. This obstinate refusal continued during the tenth, eleventh and twelfth day, when she died. When moribund and speechless, presenting the *facies hippocratica*, she closed her lips and turned away from the glass which was presented to her."

In most cases there is, indeed, the same repugnance for *food*, so that whatever nourishment is taken has to be administered by a tube. Those who die are reduced to the extremest marasmus, which often comes on with great rapidity. Some patients eat with avidity, and others will only do so at prolonged intervals. There is always *fever* present. The pulse is usually from 100 to 120, full and hard, but at other times small and soft. In the course of the disease it loses power and gains in frequency. Very frequently neither bleeding nor abstinence seem to exert any effect upon its acceleration. The tongue is almost always very rough, but not red, and in a few days becomes white, but sometimes dry and brown. Constipation is almost always present, and the cutaneous transpiration is generally suppressed. A penetrating and abominably fætid odour is exhaled from the skin. Sleep is almost entirely absent during the early stages of the disease, and resembles stupor when it occurs later. The recurrence of natural sleep is a very favourable indication.

*Pathological Anatomy.*—After examining in detail the results of seven autopsies, M. B. thus concludes:—

"To recapitulate; acute delirium may leave no traces of anatomical change. (Such was the case in two out of the seven cases) In some cases there is found a simple injection of the membranes and of the brain, while, at other times, this

is accompanied by the lesions of chronic meningitis or general paralysis. There is also sometimes found some of the appearances of ramollissement, of meningitis, of encephalitis, or of meningo-cephalitis. We conclude from these facts that acute delirium, like insanity, has no lesion which is peculiar to it. The modifications in texture, colour, and consistence, which sometimes accompany it, no-wise differ from the alterations recorded by observers in mania, dementia, and general paralysis. These pathological conditions being themselves but the results of congestion, of meningitis, and of encephalitis, it seems at first natural to conclude that acute delirium and mental alienation are but inflammations of the membranes and cerebral substance. The conclusion, inadmissible as respects insanity, has no better foundation in acute delirium. All that can be reasonably stated is, that these different morbid lesions are but complications of the disease which now occupies our attention."

*Causes.*—These are not always to be ascertained, since the patients are not in a condition to throw any light upon the subject, and when the disease comes on suddenly, it often seems to be unconnected with any antecedents. In the majority of cases, however, careful inquiry shows that "the affection has been preceded, favoured, or produced by cerebral diseases, paroxysms of insanity, or hereditary influence." Of 19 examples here cited, in seven cases the delirium appeared suddenly, and in 12 there were premonitory symptoms. The exciting causes are generally the same as those of insanity. Of the 19 cases, 11 were men and 8 women; 14 married and 5 single persons. The ages of the 19 ranged between 17 and 66, the greater number of cases occurring between 40 and 50.

"*The Diagnosis* of acute delirium presents great difficulties. Almost all authors, in fact, make it a pathognomic sign of meningitis, of encephalitis, and of meningo-cephalitis. Can we feel astonished at the vagueness of the information concerning this disease when we recollect that, a few years ago, the general paralysis of the insane was unknown to physicians, and that, even now, it is the source of frequent errors? What constitutes the difficulty of the diagnosis of acute delirium is, that it offers numerous points of contact with inflammation of the brain and its membranes, varieties of insanity, certain ramollissements, low fevers, insidious eruptive fevers, violent visceral phlegmasiæ with re-action on the brain, and many neuroses. * * * The opinions of ancient and modern authors present numerous differences as regards the symptoms, the nature, and the identity of the disease; for, while some attribute it to a lesion of the membranes and of the brain, others describe it as a special disease, destitute of known anatomical characters, and consequently belonging to the category of nervous affections."

Of all affections *meningitis* is that most likely to be confounded with it, but yet there are important marks of difference. In acute delirium there is no headache, a constant symptom in meningitis, coma never occurs at an early stage, nor is there ever seen contraction of one side, paralysis, nausea, or vomiting, all which are common in inflamed membrane. In the former disease the mental disorder bears relation to the character of the individual or the cause of the delirium, while, in the latter, it consists of unconnected cries and vociferations, or resembles mumblings and rumblings of a drunken man. In meningitis there is not the utter repugnance for food and especially drinks, there is not the excessive agitation of the body, or sinister expression of the eye. *Congestion* differs by the suddenness of the access of the symptoms and the rapidity of the progress and

termination of the affection. In *acute insanity* there is generally not so much fever and a more regular circulation; sensibility and response to external sensations are more complete; there is less concentration of thought, and more disposition to hallucination and illusion, and no convulsive movements; the disease does not last long, but terminates by cure, chronic mania, dementia, with or without general paralysis, or by death in a state of acute delirium or acute mania.

The *nervous delirium* of Dupuytren, occurring in persons who have met with accidents, sustained operations, &c., is characterized by a singular confusion of ideas of persons, places, and things. Sleepless, the patients become the victims of some dominant idea. They remain in a state of continual jactitation, and with a flushed face, and brilliant, injected, eye; they give vent, with an extraordinary velocity, to menaces and frightful vociferations. Their insensibility is such that they can employ their broken limbs, and the pulse is quiet. In four or five days the disease is terminated by death or cure, usually the latter. The rapidity with which this delirium is relieved by laudanum-glysters distinguishes it easily from the other form. *Delirium Tremens*, also, sometimes may be mistaken for this disease. The patient is continually gesticulating and speaking, engaging in imaginary labours, and in conversations concerning his ordinary occupations and continually recurring obstacles. The perspiration pours down in consequence of this morbid activity. Frequently there is little or no fever. The tremor, whence the disease derives its name, may be absent, and the diagnosis of this species of delirium is often chiefly derived from a knowledge of the habits of life of the patient, and observation of the nature of his hallucinations. Opium, and in some cases mere rest, effect a cure. The onset of *typhus* and other *fevers* may be attended by a delirium, difficult to distinguish at first from simple acute delirium; but, in the progress of the febrile affection, the manifestation of other symptoms comes to our aid.

"*Nature of the Disease.*—The characters which separate it from meningitis and meningo-cephalitis are well-marked. If sometimes they are distinguished with difficulty, it is because complications have occurred, and the diseases have become confounded. In its simple state, acute delirium is a nervous affection, which doubtless corresponds with a modification of the cerebral organ, but such modification is unknown to us. It is with regard to the proximate cause of acute delirium as with those of the delirium after operations, of drunkards, from the digestion of narcotics, and of the calenture or delirium of sailors—to the present time they have eluded all researches. Congestion is but an accessory of the delirium, which may besides be absent. Supposing even that the inflammatory element always accompanied this delirium, which is not the case, it would not constitute it, any more than it constitutes syphilis, cancer, the exanthemata, and many other pathological conditions.

"It may be asked whether acute delirium is insanity or a variety of that disease. The acuteness of the affection, the symptoms, and the general physiognomy, are so many replies in the negative; but if, on the other hand, we study the etiology, the terminations, and some of the symptoms, we shall be obliged to acknowledge that acute delirium approaches some of the acute forms of insanity. If this delirium be not insanity in the generality of cases, why isolate the patients, and place them in lunatic asylums? The reasons for this proceeding seem peremptory. Most of the subjects of acute delirium are noisy and agitated; they vociferate and howl, so that their residence in private houses is

impossible. Many of them escape undressed, throw themselves out of windows, kill themselves, fight with those who are about them, and frighten the assistants. Moreover, at its commencement, the disease is not easily distinguished from a paroxysm of insanity. The necessary means are much more easily administered in such institutions than at home. The mere sight of the establishment has sufficed to recall the reason of many of these persons, and the best answer to objections to them is the fact that many individuals have rapidly recovered by the means therein employed."

*Duration and Prognosis.*—The duration is usually very short, from two to eighteen days, and the longer it continues the greater is the danger. When the delirium is in its simple form the prognosis need not in general be a grave one. A young lady observed a rigorous fast for twelve days and was yet perfectly cured. Symptomatic delirium also, such as that arising from recession of eruptions, rheumatism, &c., usually is cured by appropriate remedies. The prognosis is very bad when the hydrophobic symptoms exist, and especially if they persist. If the agitation, cries, and convulsive movements continue five or six days, the termination is almost always fatal. A very fatal sign is the exudation of a small quantity of muco-purulent fluid from the angle of the eye. The remission of symptoms prior to coma also augurs badly. We must not be deceived by lucid intervals, which are sometimes of long duration; but when they are attended with mobility and brilliancy of the eye, restlessness of the body, hot skin, and a quick pulse, a new paroxysm is imminent.

*Treatment.*—As in insanity so in this affection *bleeding* must not be looked upon as a sovereign remedy: but it is more useful in this than in that affection, and at the commencement of the attack should unhesitatingly be employed, judging of the extent required by the pulse. In almost every case a careful exploratory bleeding is at least admissible; and the general condition of the patient must guide us as to repetition. We must not, however, be misled by the mere violence of symptoms; for if we continue to bleed or to subdue these, connected as they often are with a chronic meningitis, we only hasten on dementia or death, and in any case retard convalescence. Bleeding from the *foot* has proved more useful than from the arm, especially in strong plethoric persons, liable to congestions, hæmorrhoids, and suppressed menses. In most cases the arm is however to be preferred. Local bleeding by *leeches* is an useful adjunct. They may be applied at the side of the neck, the base of the cranium, or on the shorn scalp, in the course of the sagittal suture. In suppressed menstruation, the interior of the thighs, and in hæmorrhoids, the anus, are eligible sites. Cupping the nape or behind the ears is useful; but in most cases all these three means of depletion should be simultaneously employed.

*Baths* are one of our most valuable means, especially in the hydrophobic form of the disease; but to be of service they must be continued for five six, eight, ten or twelve hours; for it is not until several hours have been passed in the bath that the agitation becomes allayed. The desire of the patient to be removed must not be complied with, and the persons around them must tell them they have not the power of assenting to it; for the

insane are as credulous as children. The temperature should be from 75° to 85°.

*Cold affusion*, or rather irrigation, is inseparable from the baths. A watering-pot held the height of a man may be employed, and the affusion, which has a very calming effect, should be repeated several times during the bath. Ice or wet cloths must also be applied to the head; but the *douche* does more harm than good. Pediluvia and sitting baths are of use in suppressed hæmorrhoids and menses.

*Emetico-purgatives*, as antimony and calomel, when they produce purging and vomiting, are very useful; but frequently castor-oil has succeeded in producing abundant stools when far more violent purges have been tried in vain. A weak broth best masks its flavour, when the patients will take it.

"The effect of *purgatives* merits the attention of practitioners. Patients delirious, unable to comprehend any question, have been no sooner purged than they have in part recovered their understanding, and been enabled to furnish details as to their condition. Others plunged in a deep torpor, in a kind of stupor, awake, and seem to be re-vivified. In some patients whose countenance has exhibited the peculiar sinister appearance, purgatives, like bleeding, have caused the disappearance of this symptom. We cannot too often repeat that evacuants have proved of the highest utility in the treatment of this delirium: more than once their action has been instantaneous, and under some circumstances we have been obliged to prescribe them alone, the other remedies suspending their good effects. The use of purgatives should be ordered early, for the progress of the disease is so rapidly fatal, that art has need of every resource. They should be given the next day after bleeding when this shall have been necessary, and in the hydrophobic form of the disease the two remedies should be employed simultaneously. We must repeat the use of these therapeutical agents, until a marked amelioration is obtained, at least unless there are counter-indications. They must be varied, replacing some by others, according to the idiosyncracy of the subject. Purgative enemata, when they can be administered (which the restlessness of the patient often renders a matter of difficulty) speedily relieve the commonly attendant constipation."

*Revulsives* are particularly useful as the stage of agitation is subsiding and that of prostration is commencing. At a later stage they are of less and even of no use. Blisters are especially useful when there has been some prior exanthematous or rheumatic disease, as also when there exists any erratic affection. They exert most effect applied to the lower extremities. Setons are improper at the early excited stage, but are very useful when the patient does not seem to enter into convalescence, but becomes apathetic, dull, and melancholy.

*Narcotics*, as laudanum, are more successful in tranquillizing inordinate excitement when given in the form of enema than when given by the mouth. In the stage of prostration, *tonics* and *stimuli*, of which latter camphor and musk are favorably spoken of, are required. When the disease puts on an intermittent form *quinine* is very useful. The administration of *food* and *drink* is often a matter of great difficulty and only to be accomplished by the stomach pump, or in some cases by glysters.

*Restraint.*—"Should these patients be confined to their beds, or be allowed their freedom, the necessary precautions being taken? When they lie down quietly and will not remain up, it would be hurtful to oblige them to rise and to walk: but when they will not remain in any one place and seem tormented with the desire of moving about, the question is a more difficult one. Have the coercive means employed to restrain them the effect of increasing their fury and thus aggravating their condition? More than once, while observing the violence of these patients, the efforts they make to unloosen themselves, and the rage the powerlessness of these efforts cause, we have asked ourselves whether it would not be better to abandon them to themselves. On the other hand, it appears singular to allow the wandering about of individuals affected with fever, exhaling a fetid odour, and passing several days without eating, drinking, or sleeping. Nevertheless here is a case worthy of attention. M. B. was the subject of a most furious delirium; he recognized no one, sang, cried, vociferated, continually, and never ceased walking night or day. His pulse was 120, skin hot, breath fetid, mouth and lips dry, tongue covered with a brownish yellow paste. Having placed a strait-waistcoat upon him, I allowed him his liberty in a court-yard. He walked backwards and forwards, and leaped with prodigious activity. For ten days it was impossible to make him drink; he became reduced to the last stage of marasmus, and a purulent discharge oozed from his eyes. He could hardly at last sustain himself, and was obliged to sit down every minute. Towards the twelfth day he asked for a little water, and afterwards partook of some fruit. Towards the twentieth day he became convalescent. During all this time he never ceased walking, except when fatigue obliged him to lie down upon his bed. M. C. attacked with furious acute delirium, abstinence from drink, and sleeplessness, was left to himself. During five days his activity was prodigious, but on the morning of the sixth day he became pale and died in two hours. Mrs. —— was affected with fever, flushed face and hot skin, the excretions being suppressed and the expression of countenance sinister. For twelve days she had not slept, and her husband stated she was continually walking, so that it was impossible even to undress her. Privation of food and drink had endured for eight days. She remained four more days in my establishment without taking any thing, pacing her chamber, night and day. On the thirteenth day of her fast she entered the ladies' refectory, and on drink being offered her she took it. With a little precaution as to diet she soon became convalescent. These facts seem to show that there are circumstances under which it is better to leave the patient at liberty, although he may be the subject of fever and thirst, and self-condemned to fasting. So true it is that Nature guides us to health by such different routes."

## On Interstitial Extra-Uterine Pregnancy. By Dr. *Payen.*

A woman, pregnant with her second child, having enjoyed excellent health, and led an active life, was seized one evening with violent pain in the hypogastrium and afterwards with syncope. She expired in a few hours. At the autopsy a large quantity of blood was found in the abdomen. The uterus was found to be as voluminous as at the second or third month, and at its upper part a prominence was observed, which, from the diaphanous state of its walls, admitted an embryo floating in its amnial liquid to be seen. The uterine cavity was of a size equal to the development of the organ, but contained no ovum. It was lined throughout its whole extent by a thick concrescible substance, forming a kind of imperfectly-organized mucous membrane, which almost entirely filled it.

No hæmorrhage had occurred into the cavity. Above this cavity was another, evidently formed from the distension of the substance of the uterus, and situated at its superior and left portion, near the uterine extremity of the Fallopian Tube. An accidental incision prevented the ascertaining whether the tube terminated in this cavity; but this is highly probable, since its uterine extremity was not discernible on the left side, though distinct enough upon the right. The partition separating the two cavities was very thin, but no communication between them could be traced. The fœtus and its placenta attached to the upper portion were found entire in this interstitial cavity, the whole tumour containing it being equal to about a duck's egg in size. The walls of the uterus became gradually thinner as they covered it, until at last, at the upper part, they were transparent. The author states the hæmorrhage resulted from a rupture of the uterus, but he does not indicate in what part of the organ this occurred. Some inexpert *experts*, who, in consequence of the suddenness of the woman's death, and the suspicion of her friends, were charged with the examination of the body, came to the conclusion that these appearances and her death resulted from an abortion produced by the employment of some pointed instrument. The author's refutation of this opinion delivered to the officers of justice, we need not detail.

## ON THE SECRETION OF URINE IN CASES OF POISONING BY ARSENIC. By *O. De Lafond.*

The experiments of M. Orfila, leading to the conclusion that the urinary secretion is continued during acute poisoning by arsenic, and those of MM. Flaudin and Danger, that it is suspended, the author, who is the "Professor of Legal Medicine in the Veterinary School of Alfort," undertook farther experiments upon horses and dogs, in order to endeavour to decide the question; which is not only an important one as regards the affording legal proof of poisoning having been effected, but also in reference to the administration of diuretics as a remedial measure, as recommended by Orfila. The particulars of twelve of these experiments are given in full detail, as is the account of the various preliminary precautions which were taken; but for these we must refer to the volume itself, having only space for some of the conclusions.

"1. The duration of the poisoning in horses has been one hour, one hour and a half, eight hours, 21, 29 hours, and never more than 51. In dogs it has been five hours, eight hours, but not beyond twelve hours. 2. The symptoms observed during life and the lesions after death have completely demonstrated acute or sub acute poisoning. In some of the animals the inflammation of the mucous membrane was so violent, that in an hour it produced the formation of several metres of cylindrical false membranes. 3. In none of the animals has the secretion been suppressed during the poisoning. 4. The mean proportion of urine secreted in an hour by animals in good health, compared to that secreted during the same time by animals of the same species which have been poisoned, is for the horse : : 347 : 100, and for the dog : : 24 : 4; a proportion which shows that the secretion is not suppressed, but very notably diminished. 5. The urine does not begin to yield the poison until very evident symptoms of poisoning show that the arsenic has been absorbed, and is accumulating in the blood.

Nevertheless the time which has elapsed between the administration of the poison and its detection in the urine has never been less than one, and never more than seven hours."

## ON PENETRATING WOUNDS OF THE ABDOMEN WITH EXTRUSION OF THE OMENTUM. By *Hyppolyte Larrey*.

Jean Petit, æt. 22, and of strong constitution, was stabbed in the left flank with a knife. He walked to the hospital without losing much blood. On examination, the omentum was found to have issued from a penetrating wound, and was not attempted to be returned by the house-surgeon on duty. When M. Larrey saw him next day he found a wound of about six millimetres in length, situated just above the crest of the ilium, and projecting from it a lump of omentum of about the size of the two thumbs conjoined, recognizable by its fatty texture, and like most traumatic herniæ, deprived of peritoneum. The tumour was swollen and tender but nothing like gangrenous inflammation, which sometimes rapidly supervenes, had set in. The patient's general condition was satisfactory, and no sign of internal hæmorrhage existed. A few attempts at reduction were made but not persevered in, owing to the tenderness and strangulated state of the omentum. It was covered with oiled lint and a poultice; the most absolute repose was insisted upon, a bleeding practised, and complete abstinence enjoined.

In the first day or two the omentum became much inflamed and engorged, but this state was much relieved by applying leeches in its vicinity and the use of baths. On the fourth day a healthy suppurating surface became established, and sometime after the danger of further strangulation was lessened by the formation of a small ulceration at the internal angle of the wound. Towards the tenth day the omentum, which had continued firm and tender, and was freely suppurating, began to diminish in size and to slightly retract, and from this time the gradual lessening and disappearance of the swelling went on, these being aided after a-while by the application of nitrate of silver to the irritable surface, and the compression of a bandage. By the thirty-sixth day the tumour was reduced to the level of the skin, and in ten days more cicatrization nearly completed, the wound having contracted to a small aperture, which continued to the last very sensitive to the touch.

The report concludes by some general observations as to what is the best mode of treatment of cases of protrusion of the omentum. Immediate *reduction* by the taxis is the most natural and simple plan to adopt, when there are no counter-indications. Should the reduction be facilitated by an immediate or consecutive enlargement of the wound? When the wound is near the stomach or liver, and violent symptoms arise from the dragging made upon these viscera, the too narrow wound should be enlarged. But this is not to be done for temporary hiccough, vomiting, &c., which may be but sympathetic. It is not indispensable therefore, in all cases, and it exposes the patient to the risk of an issue of a larger portion of the omentum, as well as all the inconveniences of a too large cicatrix. The old surgeons almost always detached the omentum by means of a

*ligature*, but Ambrose Paré pointed out its dangers, which were demonstrated also fully in the experiments of Pipelet and Louis. *Excision* is only practised at the present day for the removal of any portion that may have become gangrenous.

"To wait, and only employ preventive or palliative means, seems to be the wisest and most rational conduct, whenever the traumatic hernia does not present any grave complication. Pipelet and Louis in multiplied experiments, which have so well exhibited the inconveniences of the ligature, have also proved that, if the omentum be left hanging out, without excision or ligature, no ill effects result after its reduction, even when it has been handled roughly. * * * * * * More than this, if gangrene has passed the aperture, and proceeded for an inappreciable depth towards the viscera, nothing better than a simple palliative treatment can be enforced. As to the old practice of drawing a portion of the mortified omentum without the wound, to discover the healthy part, it is a vicious practice which has been generally disapproved of since the time of Pipelet.

"A few words upon the secondary treatment which is essential for securing the success of the expectant method. I hope I may here be allowed to invoke the great practical authority of my father, who seems to me to have alone well demonstrated the consecutive reduction under the influence of this method, in favour of which he has formally declared himself. What should be done then? Envelop the omentum in lint soaked in oil, or better, in a compress spread with ointment, to protect it from contact with the air, and from adhering to the circumference of the wound. Some fine lint, one or two compresses, and a bandage to support the whole without constriction, completes the apparatus. If the omentum is swollen, red, and painful, a cataplasm between two pieces of linen, and local bleeding at the margin of the wound are required, cupping being more useful in this case than leeches."

The position of the patient should be flexed and easy, and if peritonitis, colic, &c., supervene, the appropriate treatment must be employed. The local inflammatory symptoms at first augment, and the omentum becomes more tumefied: but, after a while, suppuration, which prepares the parts for their future reduction, occurs. When this diminishes, the exposed part lessens, in size, tenderness and redness, and is gradually retracted towards the cavity of the abdomen. This latter stage is expedited by the application of caustics and the use of a bandage. A firm cicatrix opposes the production of any consecutive hernia in this site.

The desire to present our readers with a full view of this volume in one article, has deprived us of the space we might otherwise have employed in remarking upon its various contents.

A Treatise on Corns, Bunions, the Diseases of Nails, and the General Management of the Feet. By *Lewis Durlacher*, Surgeon Chiropodist (by Special Appointment) to the Queen. Octavo, pp. 196. London, 1845. Simpkin, Marshall & Co.

Some medical men may affect to despise so humble a branch of the healing art as the treatment of Corns and Bunions. Not so Sir B. Brodie, who published some years ago two or three excellent lectures on the subject; nor our English Hippocrates, who did not hestate to acknowledge that, in his opinion, *quantulamcunque in hoc scientiæ genere (morborum medela) accessionem, etsi nihil magnificentius quam Odontalgiæ aut Clavorum pedibus innascentium curationem edoceat, longe maximi faciendam esse, præ inani subtilium speculationum pompa ac levicularum rerum notitia, quæ fortasse medico ad abigendos morbos non magis ex usu futura est, quam architecto ad construendas ædes musicæ artis peritia.*"—Observat. Med. sect. 2.

Under such high sanction, let us proceed to notice the present volume.

Mr. Durlacher is a sensible man and a clever chiropodist. He has had the honour of *arranging*—that is the proper word—the toes and nails of three successive sovereigns of this kingdom. George the Fourth was much annoyed, we are informed, by the nail of the great toe on the left foot pressing into the flesh: Mr. D. waited upon his Majesty until six days previously to his death! Good King William's "toes were deformed and tender, so that he was continually complaining of them, but nothing could be found to afford relief." Our gracious Queen and Governor is (we trust) exempt from all pedal annoyances; but ladies are so invincibly fond of small shoes, that we should not be at all surprised to hear that the aid of her special Chiropodist was one day called into requisition.

Mr. Durlacher, like every other man who will tell the truth, admits that corns are invariably produced by the pressure of tight or ill-made shoes and boots, and that most persons might readily get rid of them if they would but consult their comfort at the expense of fashionable appearance. Wellington boots are, in our opinion, the worst of all; they confine the feet and legs, and are usually made more pointed at the toes than any other variety of *chaussure*. Since we have taken to the use of cloth-boots, *our* toes have been vastly more comfortable.

Mr. D. recommends that the feet should be washed every morning and evening; but he afterwards qualifies this advice by saying, that "adults in good health may bathe their feet every morning with cold water, wipe them thoroughly dry afterwards, and then rub Eau de Cologne freely over them with the palm of the hand. When dressing for dinner, the feet should be washed with soap and water in the same manner as the hands." The too-common custom of bathing the feet in warm or hot water is very hurtful: ladies especially do themselves much harm in this way.

The practice of our author seems to be judicious, and quite free from all quackery. The remedies, which he uses, are few and simple; being chiefly "the nitrate of silver, cold water, spirit lotions, and soap-plaster."

As a matter of course, the hard skin must be picked or cut off, before these applications can be of any use. He ridicules the charlatanerie of those advertising chiropodists who delude the public by asserting that they possess an infallible nostrum, capable of thoroughly eradicating corns!

Mr. Durlacher thus notices one or two of the less frequent forms of the complaint:—

"A very troublesome corn is found under the great toe-nail. It is generally the result of accident, or from the nail having been allowed to grow to too great a length, so that it becomes compressed, or otherwise injured, against some hard substance, bruising the soft parts beneath, and thus producing a corn from extravasation. The patient is seldom aware of the period at which the injury was inflicted, as the corn is slow in its growth. When fully developed, a black or deep red spot is clearly visible through the nail, and is the seat of severe pain. As this corn increases in size it gradually loosens the nail, which is easily removed as far as the seat of the disease.

"Another form of corn is produced inside the inner fleshy flap of the great toe, extending in many cases under the edge of the nail. It is caused by the nail having been improperly cut, or by the first toe pressing against the flap, and pushing it up higher than ordinary, so that the inner cuticle becomes thickened in layers, as a protection against the sharp edge of the nail. The corn is formed under these layers, several of which must be removed before it can be brought into view, or extracted. Until it is fully developed, no pain is experienced." P. 13.

"In operating on corns growing under the great toe-nail, the first thing to be done is the removal of as much of the nail as is loose, which can be effected with very little pain, with an ordinary nail-knife, pair of scissors, or nail-nippers, by first slitting it up on each side with the nippers or scissors, and removing the portion of nail thus partially separated with the knife, so as to expose the corn, which is then to be extracted in the usual way.

"This form of corn, being produced by accidental causes when properly extracted seldom or never returns.

"In those cases, where there is a corn situated in the inner flap of the great toe, it is necessary to remove several layers of the cuticle, previously moistening them, until the corn is exposed, when it should be extracted. If it extends beneath the nail, a part thereof must be cut away, until the corn is distinctly seen, and then it should be taken out." P. 15.

*Soft corns* are of the same structure as the hard ones. They "are always situated between the toes, and derive their name from being constantly in a state of moisture, occasioned by the perspiration or exhalation which collects between the toes, and is condensed within the cuticle on some prominent point where pressure has produced a corn.

"Soft corns are not deep-seated, and do not project much above the surface, on account of the structure of the parts, and the compression they are subject to.

"They are generally caused by the bone of one toe being pressed against the opposite joint, or by the second phalanx or joint of the little toe being forced down upon the metatarsal bone of the third. All prominent parts on the inner side of the toes are liable to this formation."

Ladies are most subject to this variety of corns, in consequence of the absurdly-narrow shoes which they delight to wear. Their formation often commences in a little blister, caused by the pressure of one toe against

another: when the serum is discharged, the new epidermis thickens into layers, and a corn is produced.

There is nothing peculiar in the treatment of soft corns. The thickened cuticle should be removed to as great a depth as it presents a whitish appearance; and, if a distinct corn has formed, it should be extracted. The Nitrate of Silver may then be slightly rubbed over its surface, and the toes kept as much apart as possible, so as to prevent the cause of its re-formation.

"I have met," says our author, "with a peculiar form of soft corn, where chalk has been secreted beneath it. This disease is of rare occurrence, and attacks those persons only who are subject to gout; it is attended with considerable pain and annoyance." P. 48.

The feet and toes are occasionally the seat of Neuralgic suffering. The following description is given by our author:—

"There is another disease affecting these parts of the toes, which, although not absolutely a soft corn, should be noticed here, as it may be mistaken for that complaint by persons who are subject to it. It is a kind of neuralgia seated between the toes, but which fortunately is not very common. It constitutes a most troublesome and severe complaint, and one very difficult of removal.

"The patient complains of a severe pain between two of the toes, along the inside of one or the other, generally the second and third, he can seldom tell which; it extends up the leg, and is increased when the toes are pressed together, more particularly after walking. Notwithstanding the most careful examination of the part, no obvious cause can be discovered for the pain, and like all similar affections of the nerves, there is not any remedy to be depended upon, as it appears to defy all medical treatment." P. 49.

"Another form of neuralgic affection occasionally attacks the plantar nerve on the sole of the foot, between the third and fourth metatarsal bones, but nearest to the third, and close to the articulation with the phalanx. The spot where the pain is experienced can at all times be exactly covered by the finger. The pain, which cannot be produced by the mere pressure of the finger, becomes very severe whilst walking, or whenever the foot is put to the ground." P. 52.

A case is given in point: and, as the Chiropodist seems to have been a better doctor upon the occasion than the titled physician, we give it for the benefit of our author:—

"I was requested by Sir James Clarke, Bart., to call on a lady who was suffering from this complaint. She was of delicate health, and appeared to be labouring under hysteria. She had so great a dread of the pain, that she dared not place her foot to the ground, and was consequently prevented from taking any other than carriage exercise. I placed a piece of adhesive plaster firmly round the foot, and then stated to Sir James Clarke that my further attendance was not necessary, as the disease was entirely constitutional." P. 53.

These neuralgic complaints of the toes are probably akin to what has been called the Writer's Cramp of the fingers.

Under the name of Neuro-vascular Corns, Mr. Durlacher describes "a peculiar and painful species of corn, having villi or nervous fibrillæ (!) clearly visible, running in zigzag whitish lines within the induration, and small corns appearing between them like white specks, corresponding in form to the cells or follicles they occupy." The expression "nervous

fibrillæ" must surely be quite inappropriate here. The treatment of these corns will doubtless require greater tact and caution, in consequence of their extreme sensitiveness. When they occur in old people, they should not be irritated or much tampered with.

The term *Bunion* should be restricted to designate an enlargement or thickening of the integuments—the part being often studded with clusters of small superficial corns—over the first joint of the great or little toe, at the articulation with the metatarsal bone. It seems to be derived from the French word "oignon,"—which is still used among our neighbours for the complaint. When a Bunion becomes irritated by pressure, the subjacent bursa very frequently becomes enlarged, and serum is effused into its cavity. "If the disease still proceeds, the pain and swelling continue to increase, and suppuration takes place within the cavity of the bursa, which, on account of the depth of its situation and the abnormal thickening of the integuments, is very slow in bursting externally. Sometimes the ichorous fluid burrows into the adjoining cellular tissue, undermining the periosteum, and in some cases causing caries of the bones, with ulceration and exfoliation of the joint."

The treatment of Bunions is very nearly the same as that of Corns.

"The most beneficial and proper local remedies I generally use are cold-water dressing, spirit lotions, and the application of diachylon and soap plasters; in the more severe cases, linseed-meal poultices, made with decoction of poppies, the nitrate of silver, potassa fusa, and also nitric acid, but these latter remedies must be employed with the greatest caution." P. 99.

If the subjacent bursa remain full and painful, its contents should be discharged by a small puncture, and the edges should be every now and then touched with the lunar caustic. The part should afterwards be covered with a piece of soap-plaster, and an easy boot worn, so as to avoid all pressure.

*Diseases of the Nails.*—These tegumentary appendages sometimes become so hard that they cannot be cut with scissors or even with nippers. We must then saw the projecting piece off with a fine small saw, "beginning on the upper surface, and gradually cutting towards the sides, the instrument being held rather obliquely, and care being taken not to cut through the nail at once, for fear of wounding the tuft of enlarged papillæ, which is frequently found under it: the occasional dropping hot water into the cut will assist the operation, by softening the nail."

For the relief of that most troublesome, and often most painful, disease, known as "the nail growing into the flesh," our author recommends (when simpler means do not suffice) the following plan:—

"The preventive method which I adopt, when the nail is rather thick and the curved edge has not injured the integuments, is as follows. I scrape the top of the nail where the curve commences, and divide the inner part which lies in the fold or flesh, by carefully slitting the nail on the upper surface from the apex, to as near the root as possible, with a properly made instrument, taking care not to cut through it so as to cause hæmorrhage; the piece thus divided is not to be removed, so that the flesh, by its pressure upwards, forces it gradually to lap over the body of the nail in such a manner, that it cannot penetrate the soft parts. As the nail grows forward to the apex of the toe, it becomes of sufficient length to be cut across with the other part; then the slit must again be carried lower

down and the nail scraped below the part which had been previously operated on. If this operation be properly performed, it can be done without giving pain; and I have known it frequently succeed when every other means have failed, and even prevent the nail from penetrating, when cutting out the piece has been ineffectual.

"When the nail has penetrated into the flesh, and ulceration has commenced, these palliative measures prove of but little service, even when practised before the appearance of fungus, and relief can only be obtained by the excision of the diseased part of the nail. This has been affected in various ways; the operation in general use in this country is that practised by the late Sir Astley Cooper, and consists in passing one limb of a strong pair of scissors under the nail, slitting it up to the root, and then pulling out the piece when detached with forceps." P. 137.

Not much need be said about the nails of the fingers, as they seldom give rise to any trouble. The following hint may be useful:—

"When a splinter of wood, or any other substance, has been forced under the nail so far that it cannot be laid hold of with the forceps or tweezers, and yet is visible, the readiest means for its extraction, and that which is attended with the least pain, is to cut down upon it, by carefully removing a narrow wedge-shaped piece of the nail until the end of the substance can be taken hold of with the forceps. Cold water dressing should then be applied for a few hours, and the part afterwards protected with a piece of black caoutchouc sticking plaster." P. 158.

*Warts* are thus distinguished from corns. "In their structure they differ altogether from that of corns, as they arise directly from the true skin, and appear to be composed of an elongated bundle of its papillæ, enclosed in sheaths of cuticle, whereas corns are a disorder of the epidermis alone."

Nothing novel is said about their treatment.

Such readers, as are curious in the history of those subjects of which his volume treats, Mr. Durlacher recommends to "consult the works of Hippocrates, Celsus, Scribonius Largus, Oribasius, Octavius Horatianus Aëtius, Actuarius, Nonnus, Avicenna, Haley Abbas, Phases, and Alsaharavius!"

On the whole, our author's work does credit to his judgment and candour. The coloured lithographed drawings are exceedingly good.

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Pulmonary Consumption, successfully treated with Naphtha, &c. Second Edition. By *John Hastings*, M.D., Senior Physician to the Blenheim Street Dispensary. Octavo, pp. 260. London, 1845. Churchill.

Our notice of the first edition of this work, in the number of this Journal for October 1843, will be found to contain the pith and kernel of its contents. Those, who choose to give a trial to the Naphtha, must take care that it is of the proper quality. The right sort is chemically speaking, *pyro-acetic spirit*, obtained by the distinctive distillation of an acetate,

generally of lead or lime: the dose is from ten to fifteen drops and upwards, mixed with a table-spoonful of water, three times a day. Hydriodate of potash, digitalis, colchicum, and other remedies, that may be deemed advisable, can be given along with it.

Dr. Hastings assures us that his enlarged experience of the remedy has tended to increase his confidence in its remedial powers. Would to heaven that other medical men may be conscientiously able to confirm the accuracy of his opinion! That our author is a hasty man in his conclusions is abundantly apparent from the circumstance that he regards Belladonna to be quite as decidedly a specific for scarlet fever as Vaccination is for the prevention of small-pox. He introduces the reports of several cases which have appeared in the pages of the weekly periodicals since the publication of the first edition of his work, and in which benefit seemed to be derived from the use of the Naphtha. In one of these, we notice a curious discrepancy of opinion as to the diagnosis of the seat of the pulmonary lesion between two eminent hospital physicians, both authors and acknowledged stethoscopists. The first wrote as follows:—"I think there is obstruction in the *left* lung, most probably crude tubercles." The other, who examined the patient three days afterwards, wrote:—"I find collapse and dulness below the *right* clavicle, with decidedly tubular breath-sound and voice. There certainly are tubercles at the apex of the *right* lung."

Dr. Hastings, at the close of his work, narrates the particulars of the two cases in which Mr. Storks has recently made, under his direction, an opening through the thoracic parietes into a tubercular cavity of the lungs. One of the patients, operated upon last November, is still alive; and his health, although still very precarious, appears to be better than it was then. In the other case, the patient died 14 days after the operation; which, in our opinion, was quite unjustifiable. Dissection revealed two large irregular cavities, occupying about two thirds of the right (it was on this side that the opening had been made) lung, and a small one in the summit of the left one! The only circumstances, in which we should think any medical man warranted in making an opening into a purulent cavity in the lungs, would be where there was the apparent pointing of an abscess outwardly over the seat of the supposed vomica—an occasional, although certainly a rare, occurrence. This was the case in two most interesting observations, which occurred several years ago in the practice of Sir Henry Marsh of Dublin. Our readers will doubtless read with interest the following account of one of these, as briefly related by Sir Henry himself. "The patient, a young woman, 23 or 24 years of age, was admitted into Steeven's Hospital, exhibiting the usual signs, local and constitutional, of tuberculous phthisis; the former being limited, apparently, to the superior part of the right lung. In that situation there existed unequivocal signs of a tubercular abscess. After having remained for some time in hospital, there was observed, about two inches above the right nipple, a small, red, slighly elevated spot upon the skin, which appeared like the usual pointing of an abscess. At this point a free incision was made between the ribs, and through the opening a large quantity of tubercular matter, pus, and thin transparent fluid escaped. This remained for months a fistulous opening, giving exit to matter in varied quantities;

during the whole of that time, I remember that a candle, placed close to the opening, was extinguished by a forcible expiration. There was scarcely a day for many weeks that a candle was not so placed by some one or other of the pupils, and always extinguished during expiration or coughing. The girl improved greatly in health, from the hour of the performance of the operation. The hectic fever, the night sweats, the emaciation, the cough and expectoration, all ceased; the chest contracted, and the strongest expectations of ultimate recovery were entertained; we were, however, disappointed: rather suddenly, all the formidable symptoms re-appeared, and the auricular signs of tubercles in the left lung were no longer doubtful. She died, manifesting all the characters of acute phthisis; the fistulous opening discharging to the last. All I can remember of the dissection is, that in the right lung there were presented the thickened irregular walls of a large tubercular abscess, nearly empty; the disease being absolutely limited to the superior third of this lung, whilst, in the left lung, the appearances were those of a recent and abundant deposition of tubercles."

In the other case—which occurred in a young girl who had hectic fever, cough, and purulent sputa—the examination of the chest detected no signs of disease, except under the left clavicle; there well-marked *gargouillement* existed. "After a few days the abscess began to point externally, a lancet was introduced, and much apparently purulent matter escaped: the chest fell in gradually, the quantity of matter discharged diminished daily; and the constitutional signs of pulmonary disease subsided. A year afterwards I saw this little girl, well nourished, free from fever, cough, and expectoration, and restored to excellent health. The chest on the left side remained much contracted; it was, in the infra-clavicular region, comparatively dull on percussion, and the respiratory sounds in that situation were comparatively feeble, but pure; in all other parts of the thorax the auricular signs were normal."

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AN ESSAY ON MARRIAGE; being a Microscopic Investigation into its Physiological and Physical Relations, with Observations on the Nature, Causes and Treatment of Spermatorrhœa, &c. By *R. Dawson*, M. D., &c. 8vo. pp. 102. London, 1845. Hughes.

THE title-page of this work did not certainly prepossess us much in its favour, as we immediately began to think of Messrs. Goss and Co., Dr. Courteney, and other men of that stamp, whose names are to be seen in almost every newspaper that we take into our hands. Our first business therefore was to look at the author's name and qualifications, and we found that he writes himself, "Licentiate of the Royal College of Physicians, London, M.R.C.S.E., &c." Notwithstanding, however, these vouchers of his respectable education, Dr. Dawson has in our opinion acted with very questionable propriety in affixing his name to such a production as this

essay; bearing, as it does, all the characters of a book, alike by its name and contents, that is less calculated for the enlightenment of his professional brethren, than for attracting the notice of the public, or at least of such members of it as wish to know something of what Dr. Ryan called the Philosophy of Marriage! Be this as it may, we can have no hesitation in assuring our readers that Dr. Dawson's Essay contains nothing that will repay the trouble of perusal.

It may, indeed, be well to remind them that, in long-continued and obstinate gleets, there may be a certain degree of seminal weakness or Spermatorrhœa present, and that the only way to determine this point of diagnosis conclusively, is to examine the urethral discharge with the microscope. If any seminal fluid be present, the existence of Spermatozoa may always be thus detected.

As a matter of course, in the treatment of such cases, we should trust rather to the use of cold bathing, steel, &c., than to that of internal or external astringents. Dr. Dawson recommends Lallemand's practice of gently cauterising the urethra with the nitrate of silver, introduced by means of his "porte-caustique."

Minute doses of corrosive sublimate with sarsaparilla are of great service, whenever the epididymis, or the testicle generally, is hardened and irregular. To check the filthy practice of the onanist, it will be useful to irritate the surface of the penis with the tartar-emetic ointment, or the acetum lyttæ; keeping up the irritation, if we can, for a month or six weeks at a time, and thereby preventing, all the while the continuance of self-pollution.

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THE PHILOSOPHY OF FEMALE HEALTH; being an Enquiry into its connection with, and dependence upon, the due Performance of the Uterine Functions, &c. By *S. Mason*, M.D., Licentiate of the Royal College of Physicians, London, and M.R.C.S.E., &c. 8vo. pp. 107. London, 1845. Hughes.

OUR lurking suspicions of the character of the work, which we have just noticed, are amply confirmed by the perusal of the present one. It would seem that Drs. Dawson and Mason live together, and carry on, we presume, a joint concern. The one manages all the gentlemen patients, curing them of Impotence and such like delicate infirmities; while the other takes the ladies under his care; his attention being, it would seem, chiefly directed to the interesting subject of Sterility, and the means of obviating this sad bar to conjugal happiness. The two partners may have agreed, upon due consideration, that it would give some eclat to their establishment, if they both appeared in print at the same time. Hence most probably the origin of their twin literary productions.

Dr. Mason's "Philosophy of Female Health" is unquestionably very much worse than Dr. Dawson's "Essay on Marriage," being little better than the general run of works of professed empyrics. The only thing in

it worthy of any notice is, that he says that he has found an etherial extract of Chio turpentine—especially when combined with the extract of Cubebs—in doses of from five to ten grains twice or thrice a day, exceedingly useful in the disorders usually connected with atony or irregular action of the uterus. Steel medicines may often be given at the same time with much benefit.

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Hints to Mothers and other Persons interested in the Management of Females at the Age of Puberty. By *Jonathan Toogood*, Licentiate of the Royal College of Physicians, F.R.C.S.E., and Senior Medical Officer of the Bridgewater Infirmary. 8vo. pp. 20. London, 1845. Churchill.

These "Hints" are surely not worthy of the respectable name which they bear. That the health of young females at the age of puberty, and the first setting in of the catamenial secretion, requires to be narrowly watched, is, as a matter of course, perfectly well known to every enlightened medical man. Dr. Toogood more than once alludes to the great advantage of "a plan which will be detailed hereafter," in the treatment of Chlorosis, Amenorrhœa, and the various maladies so often connected with these states; but, strange to say, he has omitted to inform us of what the plan consists: all that we are told being simply "that aperients and tonics—particularly some of the preparations of steel—are the remedies from which relief is chiefly to be obtained." There is certainly nothing very novel in this.

We regret to observe that he thinks it worth while to give one or two extracts from the letters of a "lady of high rank and great intelligence, who had witnessed the beneficial effects of judicious treatment in similar cases, and who applied to me, in behalf of this patient;"—very interesting truly! In another page we read that one of Dr. Toogood's patients, who had been cured by his plan, "afterwards induced several of her friends who resided in Ireland to consult me, by representing the benefit she had derived from the treatment adopted." Surely such scraps of information are not what the profession has a right to expect from so respectable a member of their corps as Dr. Toogood.

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On the Remedial Influence of Oxygen, Nitrous Oxyde, and other Gases, Electricity and Galvanism, &c. By *J. E. Riadore*, M.D., F.L.S., &c. 8vo. pp. 177. London, 1845. Churchill.

The general character and tone of this work may be judged of by giving one or two short extracts. The reader will doubtless admire the logical

accuracy of Dr. Riadore in grouping together the following very analogous diseases:—

"A general scepticism prevails as to the curing of tubercular phthisis, scrofula, asthma, chronic bronchial affections, paralysis, nervousness, and some forms of cutaneous affections; in truth, there are no diseases which bid such general defiance to the means of medical art. Some members of the medical profession, however, doubt, even the possibility of success in some of these cases; but to them and all I can most confidently declare that all my cases are related with the strictest fidelity, and that I have in every instance studied rather to under-rate the results than the contrary."

The shadowy and comprehensive generality of the expression, "some forms of cutaneous affections," will not fail to attract attention.

By turning to page 43, we find an account of Dr. Riadore's practice in various diseases:—

"I have found inhalation of oxygen of very great use in cases of indigestion, nervous debilitated conditions of the liver and kidneys, asthma, paralysis, uterine affections; and, externally applied, it is of benefit in chronic swellings of the joints."

In the course of his remarks on Electricity, we meet with the following curious piece of information, "I have frequently been informed by my patients that they have passed dead worms after I had galvanised them for some other affection. This fact may be somewhat analogous to the well known effect of a thunder-storm upon insects, leeches, worms, fishes, &c."

The bulk of the work is taken up with loose rambling remarks on food, various gases, electricity, galvanism, &c., eked out with numerous quotations from the writings of various authors, more especially of Liebig. There is an ugly Chapter on "Disorders of the generative organs," which much reminds us of the contemporaneous productions of Drs. Dawson and Mason. Do let us entreat of Dr. R. to pause before carrying into effect his announced intention to "publish his experience, in a distinct treatise, on spermatorrhœa or involuntary emission, and other defective functions of the generative organs." We are also promised, ere long, a report of our author's experience on the effects of electro-galvanism for the destruction of urinary calculi!

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Practical Notes on Insanity. By *John Burdett Steward*, M.D., F.R.C. of Physicians, &c. 12mo. pp. 122. London, 1845. Churchill.

In this little work, the author has described the results of his experience as physician to the Droitwich Lunatic Asylum for the period of ten years. There is no novelty in it, nor anything which calls for particular notice from us. Dr. Steward appears to be a sensible intelligent man, not given to speculation, nor ambitious of distinction by the peculiarity of his views and opinions. Perhaps the following remarks on the use of Emetics will enable the reader to judge for himself of the general quiet tone of these "Practical Notes."

"Properly used, emetics are of the first importance in symptomatic mania; and, fortunately their administration is easy, without having recourse to the objectionable custom of giving them in food. Where the general health is good, and where no other cause for treatment is apparent, then mere noise or violence, the use of so powerful and painful a remedy is hardly justifiable. It is not because a patient is out of temper, or because he may be a little more extravagant than usual, that we are justified in giving an emetic; on the contrary, we ought to witness the existence of symptoms pointing out the propriety of its exhibition, independent of maniacle affection; we ought to have a flushed countenance, a rapid pulse, a high temperature, a furred tongue and cold extremities; or at least we ought to suspect constipation, or an overloaded stomach To sum up our duty in a few words, we are bound to entertain a definite and sufficient object, in the use of this or any other remedy, before we employ it."

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Some Observations on Organic Alterations of the Heart, and particularly on the beneficial Employment of Iron in the Treatment of such Cases. By *S. Scott Alison*, M. D., &c. 12mo. pp. 62. London, 1845. Longman & Co.

The object of this little work is to recommend the more general exhibition of Steel medicines, and consequently to avoid the use of all lowering means, in various organic diseases of the heart, which are unaccompanied with any symptoms of inflammation or sanguineous plethora. That chalybeates are often useful in those cases of cardiac disease, in which we have reason to believe that there is either an atony in the muscular parietes of the heart, or an impoverished condition of the blood—provided always the secretion of the liver and other chylopoietic viscera be duly attended to—has very generally been admitted by all the best writers on this branch of pathology. Dr. Elliotson strongly recommended them in his clinical lectures at St. Thomas's Hospital, a good many years ago; and Dr. Copland also alludes in a forcible manner to the benefit to be derived from their use. Still however, many medical practitioners are too apt to have recourse to antiphlogistic and lowering remedies, more especially of digitalis, in almost all cases of supposed hypertrophe of the heart; seeming to forget that there may be a positive deficiency of proper muscular power, with an inordinate thickness of its muscular parietes. Dr. Alison's remarks are very well calculated to remove this error, and to lead the reader to adopt a more rational and successful treatment. We have repeatedly had occasion to observe the good effects of a regular course of chalybeate medicines—none is better than the common sesquioxyde, taken in any bitter infusion: Dr. A. seems to prefer the Mist. ferri comp., and the Ferri iodidum—in cases of *atonic* disease of the heart. Much of the benefit is unquestionably owing to their invigorating action upon the stomach, the comfort of the patient always depending very materially upon the state of his digestive organs. Hence the great and often immediate benefit that is obtained, in such cases, from the use of alkalis, bitters, hydrocyanic acid, and mild opiates. We have already—vide the review of the works of Drs. Latham and Furnival in the present number

of this Journal—spoken of the paramount importance of a seton or issue in the cardiac region, in almost all cases of hypertrophic enlargement. Dr. Alison makes no mention of the remedy.

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A FEW REMARKS ON HYDROPATHY, &c. By *William F. Soltau*, M.B., é Coll. Bąll. Oxon. Octavo, pp. 72. London and Plymouth. 1845.

THIS *brochure* ought surely to have made its appearance a year or two ago; as the cold water cure has been evidently on the wane for some time past—witness the frequent advertisements of late for the sale of (once flourishing) Hydropathic Establishments. We need scarcely say that Dr. Soltau, like every other sensible man, ridicules and condemns this and all such attempts to impose on the credulity of the public, to the sacrifice of their health as well as of their substance.

How comes it that our Oxonian author has allowed a very obvious error to creep into the very first sentence of his work? The well-known aphorism of Hippocrates is surely "Ο βιος βραχὺς, ἡ δὲ τέχνη μακρὴ"—not μαχρή.

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THE LOST SENSES: DEAFNESS. By *John Kitto*, D.D. 12mo, pp. 206. London, 1845. Knight.

A LITTLE volume that will well repay perusal. It is written by the editor of the Pictorial Bible, and contains a truly interesting account of his deafness, which is complete and absolute, and is the result of an injury of the head when he was only 12 years of age. The heaviest clap of thunder is perfectly inaudible by him; and indeed no sound, however loud, unless it induces a vibration perceptible by the general sense of touch, makes any impression upon him. The effect produced by a piece of ordnance, fired off near him, is compared to the sensation of a heavy blow upon the head from a fist covered with a boxing-glove: it is *tactual* rather than *acoustic*. So sensitive, however, is the body to the impressions arising from the gentlest tangible percussions, that when any small article, as a thimble, pencil, or even a more minute object, falls from the table upon the floor, Dr. K. is often aware of it, even when other persons sitting at the same table have not been apprised of it by the ear. He adds,

"I am subject to a painful infliction from the same cause, during the hours in which my little ones are admitted to the run of my study. It often happens that the smallest of them, in making their way behind my chair, strike their heads against it: and the concussion is, to my sensation, so severe, that I invariably wheel hastily around in great trepidation, expecting to see the little creature seriously injured by the blow; and am as often relieved and delighted to see it moving merrily on, as if nothing in the world had happened."

We would gladly extend our extracts from this interesting and beautifully written work; but this will not be necessary, if our readers take our advice of reading it for themselves.

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Observations upon the Employment of Compression in Aneurism. By *O'B. Bellingham*, M.D., F.R.C.S.I. Octavo, pp. 14. Dublin, 1845.

Since the re-introduction of compression in the treatment of popliteal and femoral aneurism by Dr. Hutton, in 1842, there have occurred eleven other cases in which it has been successfully employed. Dr. Bellingham, under whose care two of these were, has, in two numbers of the Dublin Journal, detailed the progress of this vast improvement in surgery. Compression, as now exercised, differs from that heretofore essayed in its lesser degree and shorter duration. The object now is not to altogether obstruct the flow of blood through the artery, but only to diminish it: "a partial current through the sac enables the fibrine to be readily entangled in the parietes of the sac in the first instance, and this goes on increasing, until it becomes filled: the collateral branches having been previously enlarged, the circulation is readily carried on through them." Instead of one compressing instrument, two or three are employed if necessary, so that when the pressure of one becomes painful it may be relaxed, another having been previously tightened. The patient can even regulate this himself, and no suspension of treatment in consequence of the irritation produced is necessary. The Dublin surgeons employ an instrument invented by a patient, and consisting of a modification of a carpenter's clamp, and which, Dr. Bellingham believes causes far less pain than that employed in the London hospitals.

The advantages of compression over the ligature are—1. That it is not attended with the slightest risk. 2. It is applicable to certain cases to which the ligature is not, as well as to some in which the employment of the ligature might be attended with unfavourable circumstances. Thus, in very large aneurisms, the pressure so long continued acts injuriously upon the collateral circulation, and the application of the ligature may be followed by gangrene of the limb. So, too, in large aneurisms, inflammation and suppuration of the sac very commonly follow the ligature. The vessel, again, between the tumour and the heart, may be in too diseased a state to admit of the safe application of the ligature. "Pressure is applicable to cases of the aneurismal diathesis, and when more than one aneurism exists at the same time; cases in which the operation by ligature is likewise contra-indicated; as well as to cases of spontaneous aneurism, occurring in individuals of intemperate habits, or of broken-down constitution, in which the surgeon with great reluctance would perform any operation. A few cases have been related, in which the operation by ligature failed in consequence of some irregular distribution of the artery above the aneurism." 3. If pressure fail to cure the aneurism, it does not preclude, but favours the successful performance of the operation.

The objections which have been offered to this plan are so frivolous—so purely, in some instances, objections for objection's sake, that we have neither patience nor space for allusion to them. Hunter's procedure was a vast improvement upon the methods of his predecessors; but all must rejoice at the probability of even his painful and sometimes dangerous operation being speedily superseded by a new bloodless achievement in surgery.

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OBSERVATIONS ON THE MECHANISM AND DIAGNOSTIC VALUE OF THE FRICTION VIBRATIONS PERCEIVED BY THE EAR, AND BY THE TOUCH, IN PERITONITIS. By *Robert Spittal*, M.D., F.R.S.E. pp. 19. [Reprinted from London and Edinburgh Monthly Medical Journal, May 1845.]

M. PIORRY states that although Laennec has not alluded to the subject in his work, he directed the attention of those who attended his *clinique* to the fact that the peritoneal surfaces, when inflamed, give rise to the production of certain audible sounds. M. Désprez, in 1834, stated to the Anatomical Society of Paris, that, in the early stages of peritonitis, a leather creaking or friction sound, analogous to that of pericarditis, could be heard. Since that period, Drs. Beatty, Bright, Stokes, Corrigan, and M. Désprez, have communicated additional observations: and Dr. Spittal details the particulars of two other cases in the present communication.

A tabular view is presented of the results observed in 15 cases, as recorded by the various authors. In the majority of these cases there was either a tumour of the abdomen present, or the peritoneal surface of one of the solid organs, as the liver or spleen, was affected; but the vibrations existed in other cases where these conditions did not prevail. Of the 15 cases, 4 recovered and the particulars of one are not stated. In 7 of the remaining cases, adhesions were discovered; but the *post-mortems* were in some instances made years or months after the first perception of the sounds, whose presence cannot be considered as diagnostic of the existence of adhesions.

"From the sixth column of the table it appears that almost every author who has made original observations upon this subject, has recorded the peculiar *vibratory indications perceived by the sense of touch over the part affected*; and this, no doubt, has arisen from the necessity of manual examination of the abdomen leading so directly to their detection. The character of the sensations has been very differently described, even in the same case, at different periods of the inflammation; so much so, indeed, as to render it more than probable that the various physical conditions of the serous surfaces had given rise to corresponding modifications of this peculiar sensation. * * * *The sounds perceived either along with the tactile vibrations*, or *unaccompanied* by them, are by no means so numerous as could have been wished for. Few as they are, however, they exhibit, as their identity of origin would have led us to expect, the same variations in character as the tactile vibrations, and so exact is the resemblance, and so much does the one indication suggest the other, that, in most instances, the same terms have been employed to describe them. * * * * * * From the terms used to describe the vibrations perceived

by the touch, it appears, that these sensations varied in intensity from a *soft creeping*, or *gentle vibration under the hand; or a sensation like that of the finger rubbed over a damp pane of glass*, to those of a more intense kind, described by the terms *creaking*, *crepitus*, and *grating*. The accompanying sounds varied in the same manner from a *gentle rustling*, to a *hard friction*, and sound of *creaking*."

The rubbing together of the peritoneal surfaces physically altered by the inflammatory process is the immediate cause of the vibrations. They are produced in three ways: by the respiratory movements, especially the descent of the diaphragm; by pressure with the hand; and by the peristaltic action. It is highly probable that in the early stages of peritonitis, when the membrane is drier than natural, friction vibrations occur as well as after the effusion of lymph. When the surfaces are separated by fluid effusion the vibrations cease, unless this be made to gravitate to some other part of the cavity than that under examination.

The author thus estimates the value of this sign :—

"Of the value of the facts connected with the friction vibrations, it may be remarked, in conclusion, that they appear to have placed within our power an additional method of detecting the existence of an important and frequently fatal disease, often obscure by the ordinary modes of investigation, whether from peculiarity of idiosyncrasy, or from the co-existence of cerebral complication, by which pain and its characteristic results, with reference to the position of the patient, and to the respiratory movements, may have ceased to guide the physician in his diagnosis. * * * In cases of peritoneal inflammation in the upper portions of the abdomen, simulating pleuritis, the presence of any degree of the peristaltic friction vibration might very much assist us in the diagnosis."

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A Pentaglot Dictionary of the Terms employed in Anatomy, Physiology, Pathology, &c., &c., &c. In Two Parts.—Part Second and last. By *Shirley Palmer*, M.D., of Tamworth and Birmingham. Octavo, pp. 656. Longman and Co. 1845.

In our number for April, 1842, we spoke in high but just terms, of the first part of this gigantic—not in size but labour—production of Dr. Palmer. From some unaccounted cause, its appearance has been delayed four years after its completion. It is at length published, and will stand a memorial of its author's erudition and labour as long as any of the languages in which it is written. The love of fame, present and posthumous, must be very strong in the author of this Dictionary, who, amid the distractions of extensive private practice, must have devoted so much of his time and talents to its construction as scarcely to leave him a scanty opportunity for food and sleep during many years past! The "*auri sacra fames*" could not have entered into Dr. Palmer's calculation or ambition, since *profit* was totally out of the question. The constantly extending curricula of medical education, and what is more, the daily increasing thirst for knowledge, render such a work as this indispensable to the student of our own days.

"The importance of an accurate knowledge of the French and German languages to the student of Medicine, few, in these enlightened times, will be ignorant enough to doubt, or have the effrontery to deny. Most auspiciously for the honour of our Profession and the interests of the public, such knowledge is at length, recognised in the Schools, as an essential branch of medical education. Every attempt, therefore, to facilitate the attainment of these languages, and impart an additional impulse to the youthful and aspiring mind, even though it fail to acquire celebrity, must deserve encouragement and command respect.

"Of the profoundly scientific character and high practical value of the publications upon Medicine which are continually emanating from the continental press, none but they who have access to those productions of the Master Spirits of our art in their original language, can form an adequate conception or correct estimate."—*Preface.*

Dr. Palmer informs us that, amidst the toils and anxieties of a provincial practice, he acquired, in his earlier years, without an instructor, a knowledge of the elements of several of the continental languages. The difficulties, which he experienced in this achievement, first suggested the idea of facilitating the labours of others by the extensive compilation now offered them at a comparatively trifling expense.

This devotion of our author to the good of his junior brethren is beyond all praise, and forms a remarkable exception to the host of modern authors who "rush into print," too often, for their own advantage, rather than that of the public! It would be useless to exhibit a specimen of this work; but we can safely recommend it to the attention of all zealous students as a treasure of inestimable value in the prosecution of their researches into the medical literature of the Continent.

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ON THE MEDICINAL PROPERTIES OF BEBEERINE. By *Douglas Maclagan*, M.D., F.R.S.E. (From the Ed. Med. and Surg. Journ. 163.) pp. 29. 1845.

BEBEERINE is a new vegetable alkali discovered by Dr. Rodie to exist in the Bebeera or Greenheart tree, a Lauraceous plant of British Guiana. From facts detailed in former publications, and in the present paper, Dr. Maclagan regards it as a powerful anti-periodic and tonic: and the cases he narrates bear him out in his estimate of its powers. As it can even now be produced at half the price of quinine, it will be rendered available in many instances in which that expensive drug is not so; and moreover, it has the great advantage of not injuriously affecting the nervous system to the same extent as quinine. Dr. Melier (See Medico-Chir. Rev. vol. 39, p. 306,) has shewn that the enormous doses of quinine given in France have frequently a more or less distinctly poisonous effect; but even when given in quantities only sufficient to check a fully-formed intermittent, it occasionally, as observed by the author's correspondent, Dr. Watt of Demerara, produces very unpleasant symptoms. "The head becomes confused and feels larger than usual, with ringing in the ears and deafness. The whole nervous system appears to become affected, and sometimes the hands are so unsteady that the patient can scarcely write." Upon this point, however, conclusions must not be too hastily drawn, as in 5 out of

26 cases in which Bebeerine was employed, *tinnitus aurium* also occurred. At present, about 40 cases of intermittent or remittent *fever*, occurring in various climates, and at different ages, have been treated by Bebeerine; and in all of these it has manifested a more or less anti-periodic action, although in six it did not prove eventually satisfactory.

Professor Simpson of Edinburgh has given the drug an extensive trial in some other affections. He observes that Piorry and others represent quinine as sometimes inducing abortion, when given for the *periodic neuralgiæ of pregnancy;* and that he has used the Bebeerine with the most perfect success, even in some very severe cases of this kind. So, too, in cases of slight periodic fever, during puerperal convalescence, he has found it succeed even after quinine, &c., had failed.

A case is also related of obstinate and repeatedly recurring *neuralgia faciei*, relieved from time to time by large doses of quinine, which, however, always produced "ringing of the ears, derangement of the digestive organs, and a severe febrile state of the system." In 1844, the sulphate of bebeerine was substituted, when the symptoms became effectually relieved, without any attendant inconveniences. The author thus concludes his paper:—

"I formerly expressed my opinion that bebeerine differs from quinine in not being so liable to excite the circulation, or affect the nervous system; and this seems to be borne out by the above reports, especially those of the neuralgic cases; and it has been found useful by others as well as by myself in other cases where excitant action would be hurtful, as in cases of phthisis accompanied by atonic dyspepsia. With regard to the mode of administration of bebeerine, I have commonly given it in pill with conserve, in the same way and the same doses as quinine. It can also be readily given in the liquid form, the addition of a few drops of diluted sulphuric acid sufficing to form with it a perfect solution."

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Portrait of Sir William Burnett, K.C.H., M.D., F.R.S., &c., Director-General of the Medical Department of the Navy, &c. From a Painting presented by the Medical Officers of the Royal Navy. Price £2. 2*s.* and £1. 1*s.* Highley, 1845.

The original of this splendid engraving is, and ought to be, embalmed in the memory of every naval physician and surgeon, as one of the greatest benefactors of that important class of meretorious officers. Next to Lord Melville, the naval medical profession is more indebted to Sir William Burnett than to any medical commissioner since the American war. Neither Sir Gilbert Blane, Dr. Harness, nor Dr. Weir had the power, the energy, the perseverance to carry out the *details* of improvement, laying aside certain valuable *principles*, which the zealous Director-General of the present day has brought into effect by unwearied industry and untiring zeal. We hope soon to be able to give a sketch of this talented individual's labours; but in the mean time we strongly recommend all those who have not subscription copies, to supply themselves with one of the most faithful and admirable engravings we ever recollect to have seen.

## MEDICAL REFORM.

REMARKS ON PHYSICIANS, SURGEONS, DRUGGISTS AND QUACKS. By Surgeon *Snipe*. 8vo. pp. 65. Highley, 1845.

OUR period of going to press will prevent our hearing Sir James Graham's "more last words" upon the subject of "Medical Reform;" and we must confess to entertaining some fears whether the advantages promised to the General Practitioner by the modified Bill (No. 3) may not, when even apparently within his grasp, either by his lukewarmness, the misguided conduct of some of his own body, or the opposition of his adversaries, even yet be wrested from him. The present Bill truly is not all that he requires or deserves, but it is certainly as much as in the present state of affairs he can reasonably hope to obtain, and is far more than he could have expected to have been able to wring out of the hostile clauses of the former measures. Sir James Graham has devoted time and attention to this subject, for which the profession cannot be too grateful, and all his later alterations have been favourable to the case of the General Practitioner. That he has approached the limit of these, beyond which he cannot venture, the newly-raised opposition of the Colleges show; and we feel certain if he is by this opposition, or by the mistaken policy of the General Practitioners, persuaded to abandon or even postpone this Bill, the cause of Medical Reform will be indefinitely delayed. We look upon the opposition of the Council of the College of Surgeons—(that short-sighted body now aroused to the dangers of its suicidal policy without even yet perceiving the only honorable and effectual mode of amending it)—as the strongest of testimonials to the probable efficiency and respectability of the projected establishment. A mere modification of the Apothecaries' Society would have suited the Council very well; but the erection of an institution "co-ordinate in professional rank and importance with the existing Colleges of Physicians and Surgeons," is quite another thing. Really the impertinence of these gentlemen would be amusing, were it not for its practical consequences. They degrade the mass of their members by invidious and unjust preferences, they resist their ardent demands for an adjustment of differences, they insult them with documents, the perusal of which has excited one general storm of indignation; and yet, when these outcasts endeavour to contrive means for establishing their own future status and respectability, they step in and employ all their efforts to prevent their doing so! Bad as the conduct of the Council has been, we look upon any attempt at obliging them at once to amend it, as futile and delusive; and that a worse policy could not be followed than that of delaying the acceptance of the new Charter of Incorporation with this view. This Government will aid in no attempt at coercion, and none can be successful without their sanction. The views of the minority in the Council have never been explicitly stated, and are by no means satisfactory as far as they have been stated. We do not mean to say that the members are quietly to sit down under the injuries they have received; but the agitation for the removal of their grievances to be of avail must be of long continuance, and will operate doubtless eventually through the new electoral body: but to postpone for this remote and possible contingency, the reception of the benefits which are now offered to the profession would be sheer folly. If the present Bill can be postponed, the Council will have achieved a real triumph; whereas, if it be carried they will be found far more disposed to effect some arrangement with their members, whereby their present position and influence may be in some measure retained if possible.

No great question, agitating such diverse parties was ever settled without some degree of compromise, and we look upon the present Bill to be as favourable a measure as the General Practitioner can at present procure—a tolerable foundation to commence with, but which will require and receive amendments hereafter. The penal clauses, although a considerable advance upon those contained in the Apothecaries' Act, will be found too clumsy and expensive for effectual working, and will we doubt not, after a while, be replaced by a summary jurisdiction. The preliminary examination, although it inflicts no kind of degradation upon the general practitioner, is a needless piece of complexity, no more required here than in Scotland or Ireland. It is a "one-portal" crotchet of Sir James, which, as the Council of the College themselves even strongly object to it, will probably soon be thrown overboard.

Surgeon Snipe is a droll fellow; but he much over-estimates the present condition of the public mind, when he believes that it suffices to exhibit the education and acquirements of the regular practitioner to insure his preference to the charlatan and druggist.

# Periscope;

OR,

# CIRCUMSPECTIVE REVIEW.

"Ore trahit quodcunque potest, atque addit acervo."

## Spirit of the Foreign Periodicals.

### On the Pathological Effects of Alcohol.

Dr. Peters has given us the following account of the necroscopic appearances, which he has observed in the bodies of nearly seventy persons who have died from the excessive use of ardent spirits.

*Head.*—There was always more or less congestion of the scalp and of the membranes of the brain, with considerable serous effusion under the arachnoid; while the substance of the brain was unusually white and firm, as if it had lain in alcohol for an hour or two; the ventricles were in most cases nearly or quite empty.* This peculiar firmness of the cerebral substance was noticed several times, even when decomposition of the rest of the body had made considerable progress:—Typhus fever is the only disease in which we have observed a like firmness.

*Lungs.*—Congestion, amounting sometimes to complete splenisation of the pulmonary parenchyma was a common appearance. The bronchi were very generally found reddened, and more or less filled with catarrhal secretions.

"We must make particular mention of the infrequency of Phthisis in drunkards: never have we met a tubercular abscess in them, even of the smallest size, while a small number of chalky tubercles was frequently noticed; and cicatrices also were often met with, and were marked by presence of puckering of the surface of the lungs, of solid bodies which were readily felt before the lung was cut into, and when this was done, they were found to consist of lumps or stripes of callous fibrous tissue, around which we rarely discovered a few discrete, grey, crude, small tubercular granulations: in every instance, these appearances were strictly confined to the upper third of the superior lobes, and the rest of the lungs was entirely free from either old or recent tubercular disease."

*Heart.*—This organ was generally flabby, enlarged and dilated, but little, or not at all, thickened: its outer surface was, in most cases, loaded with fat. The blood was often of an unusually fluid consistence. In some cases, where sudden death had been occasioned by the excessive use of ardent spirits, no other ap-

* In a case, related in a recent number of the Illinois Med. and Surg. Journal, the serum in the cerebral ventricles yielded strongly an alcoholic odour: this was so apparent, that it was readily recognised by every member of the Jury.

pearances were found in the body, except the fluid condition of the blood, congestion of the lungs and membranes of the brain, with serous effusion under the arachnoid.

*Stomach.*—As a matter of course, this viscus very generally exhibited some morbid appearances. Sometimes the mucous membrane appeared perfectly white, and somewhat thickened, with distinct, flat, mammellonated elevations of small size. When a quantity of undiluted spirits had been taken shortly before death, the stomach was often found wrinkled or corrugated, as if from the action of a powerful astringent on its inner surface; the mucous membrane exhibiting here and there patches of punctated, star-like or diffused, hæmorrhagic inflammation. "In ten or twelve of the worst cases, in which from three pints to two quarts of liquor had been swallowed within thirty-six or forty-eight hours before death, we found extensive hæmorrhagic inflammation of the larger portion of the stomach, with effusion of blood in large patches under the mucous membrane. In several instances in which unknown persons were found in the river, with severe cuts or bruises upon their heads or bodies, we have been enabled to testify positively, from the above appearances of the stomach, and those of the liver and omentum presently to be described, that they had been deep in liquor just before they had fallen into the water, and that in all probability no murder had been committed, as the cuts or bruises would lead one to suspect."

The *liver*, in moderate drinkers, was generally found to be somewhat larger than usual, its texture softened, and its outer surface spotted with patches of fatty infiltration extending two or three lines into the parenchymatous substance, the rest of the viscus retaining its natural colour, and its edges their normal sharpness. In those who had been more addicted to the abuse of spirits, the liver was still larger, its edges were more obtuse, and the patches of fat on its surface were larger and more numerous. In old drunkards the liver was very large, weighing at least six to eight pounds, often ten to twelve; the edges were very thick and much rounded; the parenchyma almost white with fat, soft, fragile; and the peritoneal covering could be torn off in very large pieces with ease. Granular liver was found in four or five cases only. The *gall-bladder* was always large and filled with bile.

There is no uniform or characteristic change in the *spleen:* occasionally it is rather larger than natural; but, as a general rule, the small size of this viscus contrasted strongly with the very great enlargement of the liver.

The appearance of the *omentum* is very peculiar; it is loaded with an ashy-grey slushy fat. Our attention was called to this sign in Vienna; it is there regarded as so characteristic, that a man is often judged to have been a drunkard, from a glance at the omentum, when the abdomen is first laid open.

The *mesentery* is said to be "always loaded with a thick layer of fat."

The *small bowels* generally contained a large quantity of bile, and their mucous membrane was thickly coated with a very tenacious mucus. In eight or ten of the worst cases, numerous and extensive patches of hæmorrhagic inflammation were found, with copious effusion of blood in and beneath the mucous membrane. This may account for the frequency of discharges of blood from the bowels of drunkards.

The whole body of drunkards, with the exception of the brain, generally passes over into decomposition with unusual rapidity.

Dr. Peters closes his interesting paper with the following pathological conclusions on the *modus operandi* and general morbid effects of the immoderate use of spirituous liquors.

"The most important appearances are the fluid and venous condition of the blood, and the great superabundance of fat. According to Steinheimer and Roesch, alcohol acts directly upon the blood, and drunkenness is owing to an alcoholic venous plethora, in which the proportion of hydrogen and carbon in

the blood is much increased. The same alteration of the blood occurs in poisoning with narcotic drugs, and the delirium and excitement of the nervous system, produced by them and alcohol, is supposed to be secondary to this change in the quality of the blood. According to Orfila, if a large quantity of alcohol be taken during or shortly after a meal, it coagulates the albuminous portions of the contents of the stomach, and this coagulated albumen passes off almost unchanged into the small intestines. The action of the gastric juice upon other portions of the food is prevented, and they undergo acetous fermentation. A large quantity of pure alcohol also reaches the duodenum, mixes with the bile, which loses its alkalescence, and can no longer be precipitated into insoluble flocculi by the addition of the acid chyme, as is normally the case; in the natural state, this insoluble precipitate from the bile is not re-absorbed, and is cast out with the fæces; but in drunkards no such precipitate ensues, the bile remains fluid and unchanged by the chyme, and a larger portion of it is re-absorbed; hence the bilious difficulties in drunkards and the frequent occurrence of jaundice in them. Large quantities of acid chyme and imperfectly-digested food pass along the small intestines, and even reach the cœcum and colon, where they also undergo acetous fermentation; this is sufficient to account for the dyspeptic difficulties and sour eructations in drunkards. The blood, which returns from the intestines into the vena porta system and liver, is more or less mixed with alcohol, imperfect bile and other impure matters; hence the venous plethora of the vena portæ, and subsequent affections of the liver; as much bile is brought back to the liver, it is, doubtless, re-secreted from it with great rapidity; hence, among other causes, the large quantity of bile which is usually found in the gall-bladder and small intestines.

"The chyle which is absorbed by the lacteals must be very imperfect, and is mixed with more or less altered alcohol; of course the blood which is formed from it is equally imperfect. If alcohol be added to blood which has been drawn from a vein, the blood becomes dark, it loses its normal opacity, becomes transparent, and changes to a cherry-juice-like fluid. With the aid of the microscope, we see the blood-globules gradually losing their red colouring matter, which becomes equally dissolved and diffused through the serum, which assumes the peculiar cherry-red colour; this serum coagulates to the consistence of thick milk, but cannot form solid coagula, and no watery particles separate from it. These appearances agree with those of the blood of topers, which is thick, but fluid: it coagulates very loosely, contains but little fibrine, but much albumen and fat.

"According to Rokitansky, Andral, and Engel, the blood in tubercular cachexia is arterial and rich in fibrin; while in the cancerous cachexia and typhous fever, it is more venous, it abounds in albumen, and is deficient in fibrin; hence alcohol would seem to produce a state of the blood opposite to that which occurs in tubercular disease, and is somewhat similar to that which obtains in cancer; therefore, it may prevent the development of the former, and hasten that of the latter."—*The New-York Journal of Medicine*, Vol. III. No. 9.

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## Observations on the Coagulation of the Blood in the Veins in Chronic Cachectic Diseases. By Dr. Bouchut.

About a twelvemonth ago, the author of these observations published, in the French Medical Gazette, two or three valuable papers on the pathology of *Phlegmasia dolens*, as it occurs in lying-in women. It is well known that an analogous affection is liable to be met with in the course of certain chronic diseases, quite unconnected with the puerperal state; and the object of Dr. Bouchut's present paper is to show that the cause of this affection is the coagulation of the blood

in the veins of the part implicated, and the consequent obstruction to the venous circulation.

He lays down the following position as one of uniform and invariable truth:—"In the latter stages of chronic diseases, whenever there suddenly supervenes a deep-seated pain, soon followed by œdema of the cellular tissue, in a limb, we may be assured that the blood is coagulated to a greater or less extent in the veins of the part." This morbid state has been described under various appellations—as *adhesive phlebitis*, *spontaneous obliteration* of the *veins*, and non-puerperal *phlegmasia dolens*. Hitherto the subject has never been examined in a comprehensive manner; nor has any writer brought together the detached and scattered cases of the disease that have been reported by Andral, Lee, Bouillaud, Cruveilhier and others, with the view of pointing out their analogies and general bearings.

It has been long known that, in the advanced stages of certain cachectic disorders, such as Phthisis and Cancer, the lower extremities are apt to swell and become œdematous. Hunter has alluded to this fact in his work on Inflammation, but without attaching any importance to it. Abernethy and Travers have subsequently noticed it; and after them, Breschet, in his translation of Hodgson's treatise, drew the attention of the profession a little more particularly to the subject, by publishing the particulars of three cases—one of which occurred in a phthisical patient, another in a person labouring under scrofulous disease of the vertebræ, and the third in an invalid who had fallen into a serious adynamic state supervening upon the retrocession of an eruptive fever. One or two cases have been recorded where this lesion of the veins has occurred in the advanced stage of secondary syphilis; but certainly a large majority of the examples of the disease has been observed in connection with the existence of Cancer and Phthisis. The vessels most frequently affected are the inferior vena cava, the veins of the pelvis, and those of the lower extremities.

Dr. Bouchut makes reference to the following cases of this morbid lesion, which he has recently met with in the hospital practice of M. Rayer and M. Trousseau. 1. Three women, in the advanced stage of phthisis, who were distressed, during the last month of their lives, with a burning pain in their lower extremities, caused by the obliteration of certain of the veins of the leg and thigh. The coagulation of the blood had, on each side, stopped on a level with the iliac veins. 2. A man affected with encephaloid disease of the liver: in this case, the left lower extremity only was œdematous. 3. A woman labouring under calculous Nephritis, and suppuration of the right kidney: both lower limbs were affected. 4. A woman recently recovered from Typhus fever, but who had fallen into an adynamic cachectic condition. She vomited all her food, and every attempt to nourish the system failed. For four days before her death, she suffered most severe pain in the legs, more especially in the hams: the invasion of the pain was speedily followed by œdematous swelling of the parts affected. The cause proved to be an obliteration of the deep-seated veins of both legs, extending up to the middle of the thighs. 5. A boy, who, in consequence of an extensive burn on his back, became affected with hectic fever. One evening he complained of a sharp pain in the left ham; and next morning the entire leg was œdematous, and tender to the touch along the *trajet* of the vessels. The deep-seated femoral and crural veins were found on dissection partially obliterated. 6. A similar case, which occurred in a young girl: both lower limbs were affected with painful œdema, which was discovered to be caused by coagulation of the blood in the deep-seated veins on either side. 7. A woman who had been largely bled in an attack of Pneumonia, and fell into a state of anæmia and excessive weakness in consequence. The left leg became affected with a painful œdema, that was accompanied with considerable distension of the superficial veins. In this case, there was no dissection. 8. A woman affected with disease of the heart: there was obliteration of the deep and superficial veins of the left leg. 9. A man also

affected with cardiac disease; the superior vena cava, the deep jugular, the axillary and deep-seated brachial veins, down to the middle of the fore-arm, were found obliterated. In this case, the seat of the obstructed circulation in the venous trunks was readily detected at different points, by the presence of veins that were engorged and reduced to the state of painful cords. (The meaning of this is not very obvious) Upon the surface of the neck and thorax, there was to be seen a network of innumerable veins, here and there agglomerated in the form of vascular masses like an erectile tissue, and in other places like varicose vessels—all serving, no doubt, for the purposes of the collateral circulation. The countenance and upper extremities of this patient exhibited a purple or *cyanosed* appearance, and were also œdematous: there was likewise a larg quantity of water in the left pleural sac. The lower half of the body was quite exempt from any serous infiltration. 10. A woman having cancer of the uterus: there was a painful œdema both of the upper and of the lower extremities in this case.

*The Veins most frequently affected.*—The deep-seated veins of the extremities, more especially those of the inferior, are the vessels in which coagulation of the blood, and consequent obstruction of the vascular tubes, are generally met with: occasionally indeed, but this is rare, these phenomena occur in the veins of the neck and head. Abercrombie found, on one occasion, the sinuses of the *dura mater* obliterated in a cachectic child, that died of suppurative fever caused by caries of the internal ear. Bouillaud and Baron have seen the pulmonary arteries and the hepatic veins similarly affected. But, as in these cases, there was (besides the cachectic condition of the system) a lesion of the lungs and liver, it is possible that the coagulation of the blood might have been caused by an inflammation communicated "de proche en proche," and that the fever was not fairly attributable to the existent cachexia.

So much more frequent is the lesion, which we are now considering, in the veins of the lower extremity than in those of any other part, that, out of 51 cases of spontaneous non puerperal venous obliteration, no fewer than 44 occurred in these veins. The deep-seated veins, it is to be remembered, are much more frequently the seat of the affection than the superficial ones.

The seat of the sanguineous coagulation in veins is almost always at a distance from the place where the lesion, that occasions the cachectic condition of the invalid, happens to be; so that there is evidently no immediate relation, nor result of contiguity, between the venous lesion and the diseased organ. For example, it is not the pulmonary arteries, but the veins of the inferior extremities, that are apt to be affected in Tubercular Phthisis; and in cancer of the stomach it is not the branches of the vena portæ, but the veins either of an arm or of a leg, that usually become the seat of coagulation of their contents. This anatomical fact it is of importance to attend to; as it clearly shows that the alteration of the dark blood, which is liable to occur in the course of certain chronic diseases, is in some degree spontaneous, and is not the result of any irritation transmitted directly from a morbid part to the affected veins; for, if this were so, the coagula would surely extend along the venous trunks in the whole of the intermediate space: a state of things that has rarely been met with on dissection. Occasionally indeed we meet with cases where this continuity of alteration has been detected; as, for example, in Cancer of the Uterus; when the coagula have been found to extend from the uterine and hypogastric veins to those of the thigh and leg. In such a case, the vascular lesion is clearly the result of a direct irritation, transmitted "de proche en proche."

It is not to be supposed from these remarks that we mean to imply that, in such morbid degenerations of structure as Tubercular Phthisis and Cancer, the veins immediately connected with the diseased tissues are not apt to be more or less completely obstructed by the existence of coagula within their cavities.

Quite the reverse; for this condition is by no means of unfrequent occurrence. All that we contend for is that, when the veins at a distance from the seat of the disease become affected, the morbid condition of the vessels is not continuous from that point, and therefore is not the result of direct irritation.

The *extent* of the coagula, present in venous trunks, varies a good deal in different cases. Sometimes they occupy the veins of only one of the inferior extremities, and quickly pass to those of the other, having extended upwards as high as the lower part of the inferior cava. At other times they commence on both sides at the lower part of the leg, pass up along the thigh, and stop at the fold of the groin without reaching the common iliacs. Occasionally they are found in the axillary, brachial, and anti-brachial veins, and also in those of the neck. It is often truly surprising how the collateral circulation is re-established. It is, as we have already remarked, almost always the large veins of a limb that become obliterated; the obstruction usually being found to cease as we approach the smaller branches.

The *appearance* of the intra-venous coagula, of which we are now treating, most satisfactorily shows that they are not the result of any inflammation of the veins themselves. They (the coagula) do not at all adhere to the parietes of the veins, at least in the early stage of the disease; for there seems no doubt that the presence of the clots may, like that of any foreign substance, give rise to an irritation of the lining membrane of the vessels, and eventually to genuine phlebitis. Here, then, we have an additional proof that the coagulation of the blood within the vascular tubes is primarily a spontaneous or idiopathic phenomenon. The subsequent adhesion of the parietes of the affected veins and the obliteration of their channels are consecutive processes, the result and effect of the presence of the coagula.

Whenever a venus trunk becomes obliterated, there is always a tendency to œdematous infiltration of the affected limb. When the upper extremities are the seat of this effusion, we not unfrequently find that there is a liability to œdema of the lungs, and occasionally also to hydrothorax, coming on. It is unnecessary to specify the symptoms that accompany the coagulation of the blood within the veins; as they are exactly the same as we observe in ordinary *phlegmasia dolens* of puerperal women. The duration of the symptoms varies according to the time required by Nature to re-establish the circulation by the enlargement of the superficial veins; as these become visibly larger and more distended, so the swelling, pain, and stiffness of the limb are observed to become less and less. The disease seldom or never terminates in suppuration. The œdema may indeed increase so much as to cause the skin to give way at several points, and a gangrenous Erysipelas may supervene; but these phenomena are very different from the formation of matter. Hence it is that we never meet with the symptoms of *purulent infection*—the usual accompaniment of ordinary Phlebitis.

Whether the obstructed veins ever again become pervious—as certainly occurs in some cases of *puerperal phlegmasia dolens*—under the circumstances which we have been considering, has not yet been ascertained; and indeed the speedy death of the patient, in almost every case, forbids us to expect that such an occurrence should take place. The *prognosis* is, as a matter of course, always most unfavourable.

In the *treatment* of this disease, Dr. Bouchut cautions his readers against the use of bleeding, or the application of leeches or blisters to the affected parts—except there is some very unusual peculiarity in the case. All that should be done is to wrap the limb in flannel, relieve the painful feelings by fomentations or soothing liniments, and give opium internally to quiet the general uneasiness.—*Gazette Medicale.*

## MM. Becquerel and Rodier on the Changes of the Blood in Disease.

In our last Number (p. 582,) we gave a short notice of these gentlemen's researches on the composition of the Blood, wherein they showed that a very marked change exists in the relative quantities of some of its constituent parts in the male and female. If their conclusions on this point be correct, it is most necessary that hematologists be well acquainted with the fact, as it cannot fail to have considerable influence in medical reasonings on several pathological subjects of high interest. The following observations on the changes which the circulating fluid undergoes in the course of certain diseases, are worthy of notice in the present day, when so much attention is justly paid to the question of humoral modifications. It may be asserted as a general fact, that the effect of bloodletting on the composition of the blood itself is chiefly to diminish the proportion of its red globules, without affecting in any considerable degree that of its fibrine, or of the solid contents of the serum: the decrease of these elements, when it occurs, seems to be a result of the decrease of the morbid action, and not of the quantity of blood artificially withdrawn. The experiments of MM. Becquerel and Rodier amply confirm the accuracy of MM. Andral and Gavarret's observations on this point. It is of some importance to keep this fact in remembrance, when we seek to follow out the interesting and highly useful subject of Therapeutic medicine.

Let us first briefly consider the pathology of the Fibrine. The proportion of this element is invariably increased above the normal standard in all genuine Phlegmasiæ. This, in short, is the fundamental and essential character of all inflammatory diseases; without it, an inflammation cannot exist: *voila un fait incontestable et acquis à la science*. This increase in the quantity of the fibrine is invariably found to exist, whatever may be the composition of the blood in other respects, and the proportion of its other constituents. For example, the proportion of the red globules may be less than in health in some inflammations: nevertheless, that of the fibrine is always considerably above the natural standard. But, besides this modification of the circulating fluid, there is very generally, at the same time, another that deserves to be attended to; viz.: an increase in the proportion of the Cholesterine, and a diminution of the Albumen, in this class of diseases. In what manner are we to account for these phenomena? The subject is indeed a difficult one; but we must not shrink from the attempt. Let us first consider the latter of these two facts: how shall we explain it? Perhaps the following suggestion may be worthy of notice. Recent researches in organic chemistry have tended to show that the two elements—fibrine and albumen—are in fact the same substance, only somewhat modified; at least, that the former of these elements is derived from the latter. This being the case, may we not suppose that the increase in the quantity of the fibrine may be owing to a transformation of a certain portion of the albumen into it?—a transformation that might be readily effected, seeing that the composition of the two bodies is very nearly alike. A question indeed will here naturally occur to every one:—is the total amount of the increased quantity of the fibrine, and of the diminished quantity of the albumen, in an inflammatory disease equal to that of these two elements in a state of health? MM. Becquerel and Rodier say that it is so; and from this very circumstance, they derive an argument in favour of the hypothesis we have alluded to.

But what shall we now say as to the increase in the quantity of the Cholesterine? This increase is very considerable; for the quantity of this element in certain Phlegmasiæ has been found, by our two authors, to be nearly double of that which is present in the normal condition of the blood. They have proposed the following explanation. In no diseases is the diet of a patient kept so low

and abstemious as in all active inflammations. The consequence of this is, that the biliary secretion becomes much diminished or even arrested; and the result of such a diminution or arrest is, that a greater amount of the constituents of the bile remains uneliminated and unchanged in the blood.

Before quitting this part of our subject, there are two points that may be briefly noticed with advantage. The following extracts will probably best serve to bring them under the notice of the reader:—

"In the Pyrexiæ, the deviation in the composition of the blood from the standard of health is by no means either so constant or so uniform as in the class of the Phlegmasiæ. The proportion of the fibrine *may be* diminished, and even its physical properties *may be*, and most probably are, very sensibly altered in adynamic and malignant fevers. Nevertheless these are neither universal nor necessary phenomena; and we can attach the less importance to the former of these changes, as we find that the normal proportion of this element is sometimes observed to be notably diminished, without there being any marked deterioration of the health of the individual. As yet, it must be confessed that we do not at all understand the conditions of the system, that are apt to induce the hæmatic alteration in question. It seems, indeed, highly probable that, whenever there exists a tendency to passive hæmorrhages—as is frequently the case during the course of grave fevers—there should be a diminution in the quantity, or a modification of the properties, of the fibrine. In Purpura and Scorbutus also, there is good reason to believe that the blood is deficient in its normal proportion of fibrine. In Typhoid fevers, the proportion of the red globules is generally found to be below the standard of health, and also that of the albumen in the serum to be diminished. On the whole, however, it must be confessed that the blood in this family of the Pyrexiæ does not exhibit any decided or constant changes that can be viewed as at all characteristic of the morbid condition."

*Whenever any secretion is either much diminished or entirely interrupted, it often happens that certain of the elements, which enter into its composition, are found to be present in the blood.* This proposition is well illustrated by the following two grand facts:—

A. Professors Provost and Dumas were the first to prove that, when the urinary excretion is prevented by tying the ureters, Urea, which is naturally eliminated by the kidneys, is found in the blood of the animal. It is more than probable that such an occurrence takes place in the human body, whenever the secretion of the urine is wholly or partially suppressed. Of late years it has been very generally asserted that, in the *morbus Brightii*, there is a sensible diminution of the normal proportion of the Urea in the urine, and the discoverable existence of it to a certain extent in the blood. But M. Becquerel asserts that the first of these positions is not strictly correct;* and he also questions the accuracy of the second, in consequence of certain experiments performed by himself and M. Quevenne, the head chemist of La Charité hospital, in which they could not detect any portion of Urea in the blood of patients affected with the disease.

B. Whenever the secretion of the Bile is much diminished, the quantity of Cholesterine in the blood is immediately increased; its degree of accumulation augmenting, as the amount of the secretion becomes less and less. Now such an occurrence very generally takes place under the influence of low diet, especially if the bowels be constipated at the same time. In *jaundice* the accumulation is still more considerable, so that in some cases the quantity of Cholesterine present in the blood is three or four times greater than in a state of health.

*The proportion of the Albumen in the Serum decreases to a considerable extent in three morbid states; viz., in the morbus Brightii, in certain diseases of the heart accompanied with dropsy, and in grave puerperal Fevers.*

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* Vide *Semeiotique des Urines*, par A. Becquerel.

This proposition is not to be regarded as yet absolutely and definitively proved, although it seems to be highly probable from the results of experiments hitherto made. Medical men are only beginning to direct their attention to the examination of the fluids in disease, and we therefore cannot expect complete uniformity in the conclusions to which different observers have arrived. All that can be done at present is to stimulate enquiry, by recording the facts that have been noticed, and suggesting hints for the further prosecution of the subject.

In no disease is the diminution of the quantity of the *red globules* more conspicuous—at least, in most cases—than in Chlorosis: there is also a very sensible decrease in the normal proportion of the *iron* in the blood of persons affected with this disease. MM. Becquerel and Rodier are of opinion that this diminution of the former element is rather one of the *effects*, than the proximate *cause*, of the malady, as many medical men seem to suppose. "Our observations," they remark, "lead us to believe that Chlorosis is a disease characterised by a certain number of disorders, of which the most constant and conspicuous, although not the only one, is a decrease in the quantity of the red globules. It is so true that this modification of the blood is only a consequence of the disease, that we rarely observe the decrease to be always to the same extent, under similar circumstances, or even in the same case at different times: it may be inconsiderable at first, and only become more and more decided as the malady continues. The decrease in the amount of the red globules is by no means proportionate to the intensity of the disorders present; and it may be that Chlorosis sometimes exists, without there being any decided decrease in the proportion of this element."

That Chlorosis is not merely a form of *anæmia* is shown, our authors think, by the following circumstance:—

"In chlorotic patients there may exist a veritable plethora, or surcharge of the vascular system; whereas no such thing is ever met with in that condition of the system that is induced by profuse hæmorrhage. Now, it is the existence of this very plethora which will best account for the occurrence of certain symptoms of the disease, and explain how it comes to pass that blood-letting is occasionally required for its successful treatment."

We have already said that the proportion of the Fibrine is usually greater in this disease than in healthy blood. This is a curious fact, and one that is not generally known. Many medical men are apt to imagine that it is only in inflammatory conditions of the system that such a state of the blood exists; but such is not the case; for it has been distinctly proved, by the observations of recent experimenters, that the proportion of the Fibrine of the blood is pretty generally higher than the normal standard, not only in Pregnancy, but also in Chlorosis and Consumption.

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## Condition of the Blood in Tubercular Phthisis.

According to the researches of MM. Andral and Gavarret, there are two modifications of the blood in this too common disease. The *first* is a diminution of the proportion of the red globules—a state of the circulating fluid "that coincides with the commencement of Phthisis, and perhaps precedes it, and which is found to exist in all cases where, from whatsoever cause, the vital powers of the system have lost their energy."—*Traité d'Hematologie*, p. 171.

The *second* modification consists in an increase in the proportion of the Fibrine,—an increase which is only produced, when an inflammatory action has been established around the organic or tubercular deposit.

The former change precedes the development of the tubercles, and persists as long as this continues to take place: while the latter is only the effect of a complicating malady that is induced by their presence in the pulmonary tissue.

MM. Becquerel and Rodier remark, in reference to their observations on the blood in phthisical patients, that "in those in whom there is either a softening of the tubercles, or a pleuritic effusion as a complication, the blood is found to be altered, as if the individual were affected with an active inflammation. The examination of the blood, drawn at a first venæsection, and at an early period of the disease, usually exhibits a diminished density of the blood and of the serum; a diminution in the quantity of the *red globules*, as in every phlegmasia and acute disease; a diminution in that of the *albumen*, less decided however than we find to exist in grave phlegmasiæ; an increase in the quantity of the *fibrine*, of the phosphorated *fatty matter*, and also of the *cholesterine*. Such being the case, we may assert with truth that phthisical patients are placed—as regards re-action, fever, diet, &c.—very nearly in the same condition as persons labouring under an inflammatory disease. The only difference between them, which we have discovered, is a remarkable one; it is the diminution of the animal *soap*—a diminution more considerable than in any other malady."

It may be worthy of notice here, that Felix Boudet recently announced to the Academy of Medicine that he had detected a notable quantity of fatty matter, and particularly of cholesterine, in tuberculous deposits, as well as in the livers of phthisical patients; and that he had been led to believe that there must be a considerable increase of fatty matter in the blood itself of such persons. The researches of MM. Becquerel and Rodier do not however give any sanction to this opinion.—*Gazette Medicale.*

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## THE FATTY LIVER IN PHTHISICAL PATIENTS.

"My brother," says M. Boudet, "recently sent me a portion of a fatty liver, which was so light that it floated in water, for the purpose of chemical examination. Treated with æther, it parted with nearly one-third of its weight; the loss being of a soft fatty matter, that consisted of oleine, margarine and cholesterine. The chemical composition of the liver might be stated thus:—

| | |
|---|---|
| Water | 55,15 |
| Animal matter dried at 100° | 13,32 |
| Fat formed of oleine and margarine, being slightly acid | 30,20 |
| Cholesterine | 1,33 |
| | 100,00 |

A healthy liver was found to consist of

| | |
|---|---|
| Water | 76,39 |
| Animal matter dried at 100° | 21,00 |
| Saponifiable fatty matters | 1,60 |
| Extractive matters soluble in æther | 0,84 |
| Cholesterine | 0,17 |
| | 100,00 |

By comparing these results, we perceive the greatness of the change that had taken place in the chemical composition of the liver, by the morbid degeneration of its parenchymatous substance. The proportion of saponifiable fatty matter had increased 18 times, and that of the Cholesterine at least 8 times; while the quantity of animal matter had fallen to nearly one half.

It follows from this observation that, under the influence of Pulmonary Phthisis, while the Cholesterine is accumulating in the pulmonary tuberculous

deposits,* it is present also in an unusual quantity in the liver, in which organ it is associated with an immense quantity of matter. This curious circumstance may possibly be explained thus: the oleine, the margarine and especially the cholesterine (which in 100 parts contains 97 of Carbon and Hydrogen,) are substances that abound in combustible materials, and, as these materials must consequently require a considerable proportion of oxygen for the purpose of combustion, this can only take place when the respiration is active and complete. When this function, therefore, becomes embarrassed and imperfectly performed, the combustion is only partially effected, and consequently the combustible materials accumulate in the blood, and are by it deposited in the parenchymatous tissue of certain organs."—*Encyclographie des Sciences Medicales.*

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## M. Rayer on Phthisis in Man and in the Lower Animals.

In the number of the Medico-Chirurgical Review for October 1842, we gave the most important conclusions which this truly eminent physician had drawn from his researches upon the comparative study of pulmonary Phthisis in man and in animals. He has not failed to prosecute his labours in this interesting field of pathological enquiry; some of the results of his later labours we now submit to our readers' attention.

I. In the lungs of ruminant animals, and more especially of the sheep, independently of the granulations that are usually recognised as tuberculous, we not unfrequently find other granular points of the same size and outward appearance as the former, and from which a small worm (*strongylus filaria*) may be extracted with the point of a needle. I have met says M. Rayer, with these *verminous granulations* more frequently in the months of June and July than at any other time of the year. Analogous granulations have been found by Redi in the lungs of a fox. In horses that have laboured chronic glanders, another sort of granulations is occasionally observed. These are of a reddish hue at first, and are afterwards found to contain a drop of pus, and subsequently a yellow looking matter that is sometimes associated with a minute deposit of Carbonate and Phosphate of lime.

II. It is generally supposed that the *cretaceous* or *calcareous concretions*, that are not unfrequently found in the tissue of the lungs, are the result of the last modification of tuberculous deposit. This is unquestionably a mistake. The minute miliary deposits of pus which are apt to form in the lungs and lymphatic glands, are much more frequently the cause of these concretions than tubercles. In glandered horses, and even in old animals that have never been either glandered or tuberculous, I have frequently found these concretions, not only in the lungs, but also in the submaxillary and such interbronchial lymphatic glands, as have once been the seat of inflammation. The appearance of the lungs in old men and women confirms this view of the case; for, in them, we often find points of cretaceous deposit in small indurated portions of these organs; they are usually of a blackish colour, and resist the edge of the scalpel. The circumstance therefore that these concretions are so much more common in the lungs of aged persons who, it is to be remembered, are rarely affected with genuine phthisis, and also in the lungs of old animals, such as the dog and the horse—animals that are scarcely ever the victims of this disease, but are unusually subject to

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* The researches of M. Boudet lead him to the conclusion that the proportion of this principle (Cholesterine) is ten times as great in tuberculous matter, as in healthy pulmonary tissue.

pneumonic attacks—affords pretty strong proof that they are not the result of tuberculous disease.

III. In the lower animals, as well as in man, the left lung is more frequently diseased than the right; but there is this remarkable comparative difference as respects the ordinary seat of tuberculous deposits:—in many of the former it is the middle and often the lower part of the lung, in which they frequently exist; whereas, in the latter, it is pretty uniformly the upper lobe.

IV. Some years ago, it was the custom to exaggerate very greatly the influence of pneumonic inflammation in stimulating the production of tuberculous disease; in the present day, there is a tendency to run to the opposite extreme, and assert that inflammation of the pulmonary tissue is a rare occurrence in Phthisis. This assertion is unquestionably not correct, as respects not only human beings, but the lower animals also. In the cow, for example, when affected with Phthisis, we may sometimes follow the various degrees of stages of inflammation—from the primary red engorgement of the pulmonary parenchyma to its gray induration—around, and in the neighbourhood of, the deposits of tuberculous matter. In the Quadrumana also and in Birds, the tuberculous masses are often observed to be surrounded with a sort of shell, of a reddish-gray colour, formed by the indurated pulmonary tissue.

V. In *ruminant* animals, it is very common to find, along with tubercles, vesicular worms (Echinococci and Cysticerci) in the diseased lungs: such an occurrence has scarcely ever been observed in the human subject. From this occasional coincidence of Tubercles and Hydatids, it has been conjectured by some speculative pathologists that the former morbid formation is the result of the degeneration of the latter—a doctrine that the very general absence of any of these vesicular worms in the lungs of phthisical patients, not only in man, but also in the Quadrumana and Carnivora, may be considered abundantly to disprove. It is equally a mistake to imagine, as some have done, that there is any relation between the formation of the tubercles in the domestic pig and the development of the Cysticerci, with which this animal is much more frequently affected. In truth, there is no more connection between these two lesions than between the formation of tubercles, and the appearance of the *strongyli*, which are occasionally found in the bronchi of this animal.

VI. Chronic Pleurisy is very commonly associated with tubercular disease of the lungs, not only in the human subject, but also in the lower animals. In the latter, more frequently than in the former, deposits of tuberculous matter are often found in the pseudo-membranous adhesions between the costal and pulmonary pleuræ. In birds, the air-sacs are sometimes so much infiltrated with grains of a friable, yellow-coloured substance, that they form sorts of hard and hollow shells; the internal surface of which—as well as of other cavities to which the air has free access, as for example the bones—is sometimes lined with a veritable *mouldiness*, such as is commonly found on decayed animal matters. This complication must, as a matter of course, greatly add to the embarrassment of the breathing. Since the attention of the pathologist was first directed to this phenomenon of vegetable fungi growing on the morbid tissues of a living animal, by M. Rayer in 1815, it has been repeatedly observed by others in different species of birds.

M. Rayer has met with only one similar instance in the human subject. It occurred in a phthisical patient in whom the cavity of the eighth pleura,—which was filled with air and a small quantity of fluid at the same time—communicated by an ulcerated opening with the bronchi. The pleura, on the anterior part of the chest, was lined with a false membrane, which exhibited, at two points, spots of distinct and veritable *mouldiness*. An analogous phenomenon is occasionally observed in the mouth of new-born infants affected with the *muguet*, on the crusts of *tinea favosa*, and on the surface of gangrened parts.

VII. The relation of certain morbid changes of the liver with the existence of

Pulmonary Phthisis has attracted the attention of all recent pathologists. There is very considerable difference between man and the lower animals in respect of this morbid coincidence. In the former, the liver is rarely infiltrated with tuberculous matter, even when the lungs are crammed with it. In sheep, however, this coincidence is tolerably frequent; and, in the quadrumana, it is still more so; in them, the surface of the liver often exhibits numerous tubercles in various stages of development. In birds, also, the liver and lungs are often the seat of tuberculous deposits at the same time.

The *fatty degeneration* of the former viscus is much less frequent in the lower animals, when affected with phthisical disease, than it is in the human subject. Certain writers have carried their theoretical views further than facts warrant, when they have asserted that, in order to produce the "foie gras" in geese, the birds are made to fall *into a sort of marasmus*, by enclosing them in dark cages, and feeding them with a particular sort of aliment. I have repeatedly examined Strasbourg geese, in which the liver had become enormously enlarged and fatty; but in all of them, the lungs were perfectly sound, and the whole body was loaded with fat. The blood of these birds sometimes presents a milky appearance, in consequence of the quantity of fatty matter contained in it—an appearance which has never been noticed in the blood of phthisical patients.

VIII. In children, affected with Phthisis, the serous membranes, and especially the peritoneum, often exhibit tubercular granulations on their surface. In the Monkey tribe, the abdominal viscera are not unfrequently found to be glued together into one mass by adhesions in every direction, and these adhesions to be infiltrated with an innumerable quantity of miliary tubercles. The same morbid appearance is not unfrequently observed in Birds.—*Archives de Medecine Comparée. Encyclographie des Sciences Medicales.*

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## FRENCH REPORT ON VACCINATION.

This report was read by M. Serres at the seances of the Royal Academy of Sciences, on the 21st of February and 3d of March. The following are the general conclusions with which it terminates.

1. The preservative power of Vaccination is absolute in a large majority of individuals, and temporary only in a small number. Even in the latter case, it is almost absolute up to the period of adolescence.

2. Small-pox rarely attacks vaccinated persons before the 10th or 12th year of their age. From this period to the 30th or 35th year of life, the liability to variolous infection is greatest.

3. Besides its preservative virtue, Vaccination introduces into the organization a property or power which attenuates (so to speak) the symptoms of small-pox, shortens their duration, and very considerably diminishes their severity and danger.

4. Cow-pox lymph, taken directly from the animal, gives to the local phenomena of Vaccination a more decided intensity, and its effects are more certain than when old virus has been used. It would seem, however, that, in the course of a few weeks after its transmission to the human system, this local intensity no longer exists.

5. The preservative power of cow-pox does not appear to be intimately connected with the intensity of the symptoms induced by Vaccination: nevertheless, in order that the properties of the lymph be duly preserved, it will be prudent to regenerate it as frequently as possible.

6. Among the means that have been proposed to effect this regeneration, the only one deserving of confidence is that of deriving the vaccine lymph occasionally from its parent source.

7. Re-vaccination is the only sure test that we have to enable us to distinguish such vaccinated persons as are decidedly proof against the infection of small-pox, from those that are only partially or imperfectly so.

8. The result of re-vaccination does not afford a certain proof that those vaccinated persons, in whom it takes effect, were destined to contract small-pox; but only a high probability, that it is especially among such individuals that the disease is likely to occur.

9. As a general rule, re-vaccination should be practised at, and from, the 14th year of life. If small-pox, however, be epidemic, it will be prudent to anticipate this age, and re-vaccinate from the 8th or 9th year.

Among the prefatory observations of the report, allusion is made to the circumstance that Vaccination will sometimes *take* most perfectly in persons who have had small-pox M. Moreau, the distinguished accoucheur of Paris, assures us that he has vaccinated himself with effect three different times, although he had the small-pox in his youth.

An official document, published by the Government of Wurtemburg, and wherein it is set forth that, out of 1677 cases of small-pox which occurred from the year 1831 to 1836, no fewer than 1055 were in vaccinated persons, contributed very materially to encourage the performance of re-vaccination in most parts of Germany.

The reports, too, of various epidemics of small-pox of late years in this country (France) clearly show that the proportion of vaccinated persons, who have become affected with the disease, is more than one-third of the entire number attacked. The importance, or rather the necessity, of re-vaccination is therefore strikingly apparent. We have good reason for believing not only that multitudes have been preserved from variolous contagion by having recourse to this measure, but also that the disease has thus been actually arrested in its progress by, as it were, a barrier which it could not overleap.

The effects of re-vaccination in the Prussian army, since the year 1833, have almost completely extirpated small-pox from its ranks. In the Kingdom of Wurtemburg also, it has been found that out of 14,384 soldiers, and 19,864 civilians, who were re-vaccinated, only one case of Varioloid has occurred among the former, and only three among the latter, during the period of five years.

Since the year 1830, when the practice of re-vaccination became general, no epidemic of small-pox has been experienced in that kingdom. The good effects of this practice have been not less striking in some of the Italian states.—*Comptes Rendus.*

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### ON THE STATE OF THE FIBRINE OF THE BLOOD IN INFLAMMATIONS.

To Signor Polli, the author of a clever work on the blood, the following observations are due.

The Fibrine, it is well known, is in a fluid state during life, and remains so for a short time after the blood has been drawn from the body. All blood coagulates more or less distinctly, before it passes into a state of putrefaction. Those who have spoken of the blood being in such a dissolved condition as not to exhibit any appearance of coagulation before putrefaction, have been either hasty or inaccurate in their observations.

"I have oftener than once," says Dr. Polli, "caused the coagulation of blood, taken in a fluid state from a body that had been dead for 36 or 48 hours; and I may here remark, *en passant*, that cadaveric rigidity and resolution appear to depend, in all cases, on the fibrinous clot being either formed, or retarded, or re-dissolved in the capillary vessels of the subject."

The process of Inflammation gives rise to three principal modifications of the

*fibrine* of the blood—viz., an increase of the quantity, a diminished tendency to coagulate, and, lastly, a molecular rarefaction. M. Polli—following the example of chemical writers in their nomenclature of bodies that are isomeric, or, in other words, which retain the same composition although their properties are different—proposes to call the second of these modifications *bradifibrine*, and the third *parafibrine*. The increased quantity of the fibrine, and its diminished tendency to coagulation, being two effects of inflammation in the blood that are well known, we shall confine our present remarks entirely to the phenomena of its molecular rarefaction, or in other words to the *parafibrine*.

It is a well-known fact that a liquid, which holds dissolved a solid body specifically heavier than itself, acquires an increased density. Now, the contained fibrine—which is specifically heavier than serum, since it falls to the bottom of the vessel in which the blood is contained—when it exists in the liquid state in the blood, diminishes, under the influence of active inflammation, the density of this fluid, so that the serum in which it exists is specifically lighter than the same serum when deprived of its fibrine. In other words, the fibrine, in this peculiar state of fluidity, produces such a rarefaction of the principles of the blood, more particularly of its serum, that it renders it specifically lighter than when it is defibrinated. The following experiment, one of many, may be briefly quoted here: A woman, in the eighth month of pregnancy, was seized with severe pneumonia, for which she was bled several times. The blood first drawn indicated, at the moment of its detraction, 6,1 on the areometer; and 6,3 after it had been defibrinated. At the sixth bleeding, it indicated 5,4, both while it was flowing from the vein and after the fibrine had separated. At the eighth and last operation, it had fallen to 4,5 at first, and 4,6 after the blood had lost its fibrine.

We may therefore conclude that the fibrine of the blood may, under the influence of disease, lose its ordinary density, or become rarefied; that, thus modified, it may impart its tenuity to the sanguineous mass in which it exists; and lastly that, in this state, it is at least more rarefied or less dense than the albumen of the serum. But such a conclusion must not be adopted as a general or invariable truth; for the fibrine of the blood, in a person affected with an inflammatory disease, does not exhibit either uniformly, or in all parts of the body, the characters we have mentioned. The *parafibrine* is only one of the modes in which the fibrine may exist in consequence of the act of inflammation. While in the first degree of this morbid process there is simply an augmentation in the quantity of this substance, and, in the second or more severe degree, there is produced the *bradifibrine*, it is in the most severe or advanced of all—at least, (and this is an important reservation) in the most advanced degree of those cases that are susceptible of complete resolution, and consequently below the mark of suppuration and gangrene—that the formation of *parafibrine* takes place.

Now let us briefly notice some of the characters, by which Parafibrine may be distinguished.

Usually it coagulates very slowly; and its coagulation takes place by such fine, loose, and transparent filaments that they are scarcely visible to the naked eye, and, when regarded with the serosity that is retained, they constitute a mass whose appearance is rather gelatinous than fibrinous and coriaceous. The delicate web, which this sort of fibrine forms in the process of solidification, may be compared to the cellular web that gives a sort of consistence to the white of an egg, or to the vitreous humor of the eye: only it is rather more consistent. . . . The serum, contained in the bullæ of a blister or of a burn, is rich in *parafibrine*. To separate it, all that we need do is to put such serum aside for a short time. If the fluid be then decanted, we find a gelatiniform coagulum, which, at the end of twelve or twenty-four hours, becomes converted into a fibrous membranule that falls to the bottom.

When, along with the parafibrine, the blood contains a certain quantity of or-

dinary fibrine, or of *bradifibrine*, the coagulation of these substances takes place, not only at different times, but also with a peculiar appearance in each case. Thus we observe, at first, filaments of fibrine that are white, opaque, and like a web that has large meshes, and has a somewhat radiated appearance. Among these filaments, the *parafibrine* is subsequently deposited, gelatinous and more or less transparent.

These remarks may tend to suggest some explanation of an important pathological phenomenon, viz., the fibrinous or plastic and the sero fibrinous transudations, which seem to constitute the issue or termination of inflammatory action in membranous structures on most occasions. Hitherto it has been difficult to explain how these depositions or extravasations took place; but if we bear in mind that, under the influence of inflammatory disease, the fibrine—or, at least, a certain part of it—becomes of a thinner consistence than the serum itself, we may readily conceive, *a*, that it may transude through the parietes of the blood-vessels; *b*, that, when once escaped from the circulatory system, it may collect together, expanding perhaps into the false membranes, or falling down to the bottom of an effused fluid; and lastly, that these various mutations, as well as the formation of the *parafibrine*, take place only under the influence of a certain degree or severity of inflammatory action, as we have already mentioned. This is higher than that required for the production of the *bradifibrine:* at least, several considerations lead us to believe so. For example: 1, the *parafibrine* is found in the blood drawn at the first bleedings; but very rarely in that which is drawn during the progress of a severe phlegmasia. It is therefore an accompaniment of the disease when this is most violent, disappearing before the formation of the *bradifibrine*, and for some time previous to the simple augmentation of the normal fibrine. 2. The *parafibrine* may be obtained from a vesicated surface, not when the subjacent dermis is pale, but when it is red, and about to secrete pus shortly. Serosity, parafibrine, and purulent matter—such is the regular order of the secretions successively exhaled from the skin, in proportion as the existent irritation becomes more active and intense.—*Annali Universali di Medicina. Gazette Medicale.*

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## CRANIO-MALACIA, OR SOFTENING OF THE BONES OF THE HEAD.

About three years ago, Dr. Widtmann was called to a child, nine months old, who had died suddenly and most unexpectedly on its mother's lap. The attendants drew his attention to the state of the occiput: it was quite devoid of all hair, had a bluish aspect, and was so soft and unresisting to the pressure of the finger, that it yielded like a piece of thin pasteboard. Dr. W. attributing the death to *Laryngeal Asthma*, did not think much of the case, till about a twelve-month afterwards, when he happened to meet with, in the writings of M. Elsaesser on *Atrophy of the cranium*, an exact description of its leading features. According to this author's observations, the occipital bone, in this morbid state, will often be found on dissection to exhibit several solutions of its osseous continuity, the vacant spaces being then filled up with nothing but membrane. The periosteum is usually highly vascular, thick, and firmly adherent. Such a state of the cranial bones M. Elsaesser regards as the commencement of rickets; this disease subsequently affecting other bones of the skeleton, if the patient survives. As a matter of course, the children affected with it are always poor weak ailing creatures, with big heads, pale bloodless complexions, and tumid bellies. These are the usual victims of that disease which, under the names of *thymic asthma*, *laryngismus stridulus*, *laryngeal asthma*, &c., has attracted so much notice of late years. M. Elsaesser prefers to call it *tetanus aproicus* (*i. e.* non respirabilis) *periodicus*, and attributes it to a transitory congestion of the brain, which has

become the more readily excited in consequence of the attenuation of the cranial bones. The disease most frequently occurs in the second trimestral period of life. A common symptom in such children is, that they are fretful and uneasy, whenever they are laid down; while they may generally be pacified by taking them up in the arms, and keeping the head well supported.

Dr. Widtmann relates no fewer than *nine* cases of this infantile asthma, in every one of which, he assures us, there was a very obvious and easily recognizable softening of the occipital bone. In one, which proved fatal, this bone is described as being externally of a deep blue colour, and as thin and yielding as a piece of parchment; the diploe was soft and full of a sanguinolent fluid.—*Medizinisches Correspondenzblatt Bayerischer Aertze.*

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## On Intra-thoracic Solid Tumours.

The history of these morbid growths has hitherto attracted very little notice from any pathological writer. Dr. Gintrac of Bordeaux, twenty years ago, published a memoir on the diagnosis of various thoracic affections. Among these he mentions several instances of Steatomatous and Tuberculous tumours connected with the pleuræ; and now his son, M. Henri Gintrac, following the footsteps of his father, has, in his recently published "Essai sur les Tumeurs Solides Intra-thoraciques, 1845," collected together the histories of thirty-two cases of solid tumours—developed within the chest, but not appertaining to, or primarily connected with, the thoracic viscera. The structure of these growths or tumours was, as might be expected, very different in different cases: sometimes it was *encephaloid*, at other times *scirrhous*, and in a third set of cases it was *tuberculous*. In several instances it has been said to be of a *steatomatous* nature. We shall briefly relate a few cases of this rare affection.

*Case.*—A man, 75 years of age, had been for a length of time asthmatic, and much distressed with palpitation of the heart upon any exertion. He became dropsical, and gradually sank and died.

On dissection, a circular, somewhat flattened, osseous tumour was found at the lower and inner part of the right lung, the substance of which remained perfectly sound, but somewhat compressed. The left lung also appeared quite healthy; but it had been pushed upwards and backwards against the vertebræ, the lower part of the pleural cavity being entirely occupied with a large tumour that had become developed there. It proved to be a cyst with hard bony parietes, adhering by its upper surface to the substance of the lung, and by its lower to the diaphragm. The question naturally suggests itself, how are we to account for the development of such tumours in the cavity of the chest? If we attempted an answer, we might be inclined to say—perhaps by the osseous transformation of false membranes that had been formed during an attack of pleuritis at some former period. Several cases are recorded by M. Gintrac that were analogous to the one now briefly related; and in the history of one or two, it is not difficult to follow the connection of the phenomena which seemed to trace back the formation of the intra-thoracic tumour to an old pleuritic attack.

In other cases, the development of the morbid growth had clearly nothing to do with any previous inflammation in the part; for it was of an encephaloid or scirrhous nature.

The situation of such tumours was sometimes between the pleura costalis and pleura pulmonalis; at other times, it was between the latter membrane and the substance of the lungs; or between the former and the ribs. Occasionally they occupied the place of the mediastina; and in a few rare cases they seemed to have originated in the osseous substance of the ribs themselves. Some of the cases

of genuine intra-thoracic tumour have, at different times, been published as examples of degeneration or of hypertrophe of the Thymus gland—an opinion which M Gintrac considers to be quite erroneous.

It is rare that these tumours have been diagnosticated during the life of the patient. Occasionally indeed this has been the case, as in the following instance.

A man, who had for many years been subject to catarrhal complaints in the winter season, had an attack of pneumonia in 1830. In the end of May, 1839, he received a heavy blow on the lower and anterior part of the chest. On the following day, he found two distinct swellings in the part that had been struck. Being examined at St. Andrew's hospital in Bordeaux, it was found that one of these swellings rested outwardly upon the cartilages of the third, fourth, and fifth ribs, and inwardly upon the corresponding part of the fore surface of the sternum. It was irregular and knobby on the surface, resisting to the finger, without any sense of fluctuation, and firmly adherent to the subjacent parts. The second swelling, not more than four *centimetres* apart from the other, was larger, and of a hemispheric shape. It rested on the cartilages and anterior extremities of the eighth, ninth, tenth and eleventh right ribs, being situated externally, or rather farther back from the median line than the other; it was equally unyielding and immoveable.

The patient was suffering a good deal, at the time of his admission into the hospital, with dyspnœa: this became gradually worse and worse, and he died fifteen days afterwards.

From the external appearances, coupled with the existence of symptoms that indicated a compression of the lungs, M. Gintrac senior gave it as his opinion, that there was an intra-thoracic tumour in this case.

On *dissection*, a large tumour was found to occupy the entire front mediastinum, adhering firmly to the posterior surface of the sternum and the cartilages of the ribs. The heart was pushed back, and the lungs compressed against the vertebræ. Similar morbid growths were found attached to the right clavicle, and to the inner surface of the tenth and eleventh ribs on the right ride.

Now, even in this case, it is very doubtful whether any correct diagnosis could have been formed, if it had not been that the presence of the extra-thoracic tumour naturally enough suggested the idea of the co-existence of similar growths within the chest.

In a somewhat analogous case, MM. Corvisart and Leroux mistook an immense fibrous tumour, compressing the left lung, for an effusion of fluid into the pleura. The case is altogether so interesting, and represents so well the phenomena which usually accompany the existence of tumours within the cavity of the chest, that we are induced to give the particulars of it.

A man about 33 years of age, accustomed to hard labour, was subject to alternations of profuse perspirations and sudden chills; he was attacked with cough, accompanied with mucous expectoration; to which were soon added hoarseness and dyspnœa, along with a sensation of pricking and pain, extending from the throat to the extremity of the sternum, and which was sometimes so acute as to occasion fainting. The dyspnœa increased daily. Some months after, hemoptysis supervened; the pains augmented; the beatings of the heart became more frequent and tumultuous. The lower extremities became œdematous and the sleep uneasy and agitated. When he entered the hospital, his face was pale and puffy, and his eyelids were œdematous. A slight pain was felt towards the larynx and at the commencement of the trachea; the sputa were puriform, often tinged with blood; cough frequent; respiration short, deep and sighing. The left side of the chest was more *bombé*, and rounded than usual; on percussion it did not give out any sound. The right side gave an obscure sound anteriorly, and a more clear one on the back and side. On applying the hand over the heart, no movement or pulsation of that organ could be felt. The patient preferred the sitting posture, inclining forward; but he could lie down either on the back or

on each side, though more frequently and with greater ease upon the left one. The sleep was troubled with painful dreams. The pulse in both arms was small, frequent, and tolerably regular; generally, a little less strong on the left than on the right side. The skin was slightly œdematous over the whole surface of the body; the feet were much engorged.

Corvisart, judging as much from the symptoms manifested since the attack of the disease, as from the signs furnished by the actual inspection of the patient, having especial regard to the total absence of sound in the left side of the chest, thought it was a case of effusion, filling all the left cavity of the thorax, and compressing the lungs so as to annihilate their functions. The breathing became worse, the expectoration altogether purulent, and the patient gradually sank and died.

*Dissection.*—In place of the effusion that had been predicted, there was a solid mass, of a reddish white colour, and of an irregular and nodulated surface, which filled the left side of the thorax, occupying also the usual place of the mediastinum, and extending upwards and in front on the right side. The left lung, of which the parenchyma was almost entirely disorganized, was reduced to a state that was almost lamellar: it contained besides an abscess in its substance. The right lung was considerably diminished in size; and the mediastinum, the pericardium, and the heart were pushed into the right cavity. The tumour was evidently situated between the debris of the upper lobe of the left lung, and the mediastinal pleura.

Pleural effusion is not the only morbid condition that may be mistaken for the presence of intra-thoracic tumours. M Gintrac relates several cases where these growths have been accompanied with all the usual symptoms either of pulmonary or of cardiac disease. In a few instances, the most conspicuous symptoms were those indicative of hepatic derangement. With all our improved means of diagnosis, derived from Auscultation and Percussion, the case will almost always be one of perplexity and doubt. If there happen to be any outward tumours on or near to the thorax, and if the constitution of the patient be decidedly cachectic, and especially if the shape of the chest has become visibly altered since the first occurrence of the symptoms, we may possibly be led to form a correct opinion. The age of the patient may partly assist us; for most of the cases, hitherto observed, have occurred in middle-aged and old persons. In more than one instance, the aggravation, if not the invasion, of the symptoms was traceable to a blow or other injury of the chest. In almost all the cases collected together by our author, the heart was observed to be more or less displaced from its natural locality: this therefore is a phenomenon that deserves to be taken into account in our attempts to form a diagnosis. As a matter of course, the symptoms must vary alike in their character and intensity, according to the parts which are compressed or otherwise injured by the unnatural production within the thoracic cavity.

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## Singular Case of rapidly-fatal Emphysema: pultaceous Softening and sub-peritoneal Rupture of the Stomach.

The editor of the French Medical Gazette remarks that the following is one of the most remarkable cases on record. It certainly does seem very strange that Emphysema, proving so rapidly fatal, should have proceeded from a lesion of the stomach, or indeed of any other organ save the lungs. It is much to be regretted that the report of the case, more especially of the *post-mortem* appearances, is so incomplete.

A medical gentleman was suddenly taken ill immediately after eating. His breathing became laborious, and his voice scarcely to be heard; the skin was

chilly and anserine, and the pulse small and contracted: the abdomen at the same time was exceedingly distended. No sooner was an enema administered, and the patient had begun to strain in the act of defæcation, than his neck was observed to become emphysematous, and he was threatened with suffocative dyspnœa. The action of the lungs seemed to cease; his face assumed a purplish hue; the puffy swelling increased at every inspiration, during every act of which the patient appeared to be making, in spite of himself, the movements of swallowing. In the course of a very short time, his appearance was scarcely that of a human being, so swollen and puffed out was every part of the body; but, from time to time, there issued a moan that indicated the inward sufferings of the patient. A burning thirst made him continually ask for drink; but the greatest difficulty was evidently experienced in swallowing. He expired in the course of a few minutes, immediately after an effort to swallow a mouthful of water: the suffocation was complete. The corpse was soon excessively distended, so that it looked more like a blown-out bag than a human body.

*Dissection.*—The abdominal parietes, enormously expanded, did not sink down when an incision was made into the cavity of the belly, which did not contain any gas. Upon a transverse incision being made, there was exposed the stomach: this viscus was so distended, that it protruded through the wound, and was found to extend from the epigastric region into the iliac fossa: its muscular coat seemed to be hypertrophied. On drawing it forwards, the epiploic fold attaching it to the diaphragm was torn across; and then it was discovered that air escaped from a large aperture in it, extending from the cardiac to the pyloric orifice along its small curvature. The substance of the parietes of the stomach along this extent had undergone a pultaceous softening: the mucous coat was highly injected with dark-coloured blood, and appeared to become sensibly more and more attenuated in approaching the seat of the ramollissement. The *lungs* were squeezed up against the vertebral column: the *heart* was full of dark blood. There was no serious lesion anywhere, save and except in the stomach, as we have just described.

Professor Burgraeve, who has given the preceding (very imperfect) history of the case, explains the suddenness of the fatal event in the following manner: "A rupture of the stomach must have taken place under the peritoneum, and the air, forcibly drawn in by the movements of the chest into the vacuum that was produced, have become extravasated into the general cellular tissue, chiefly along the vertebral column where this tissue is loosest, and whence it was diffused to every part of the body. Hence those violent efforts of deglutition that were so marked during life. The thoracic viscera and the great blood-vessels must have first experienced the effects of the compression, especially from the column of air ascending along the posterior mediastinum. In the neck, the pressure must have been greatest, in consequence of the aponeurotic bands between which are situated the trachea and the vascular trunks, arterial as well as venous. The extravasated air had stopped at the cranial vault, none of its apertures having afforded an egress to it, and had left the brain intact. This organ had not suffered until subsequently, by the unceasing progress of the asphyxia."—*Annales de la Société de Med. de Gand.*

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## ON THE USE OF IODURET OF POTASSIUM IN SYPHILITIC AFFECTIONS.

The report, which M. *Gauthier* has recently published respecting the curative power of this salt of Iodine in secondary and tertiary syphilitic affections, is on the whole highly favourable to its use. He has administered it in a vast number of cases, and has rarely noticed any injurious or even unpleasant effects fairly attributable to its operation. On a few occasions it appeared to cause a saliva-

tion; which, however, speedily ceased. Now and then, an innocuous exanthem made its appearance on the surface. In some persons it causes slight gastric irritation; but in most, the digestive functions appear to be decidedly improved under its use. In no instance has any wasting of the body seemed to be induced by it, as has occasionally been observed with respect of Iodine. One of the most constant effects of the Ioduret is to increase the flow of the urine. It seems to pass very rapidly into this and the other secretions; its presence is readily discoverable by its well-known appropriate tests. M. Gauthier has often detected it in the saliva.

The following are the forms of the syphilitic disease in which he has witnessed the most decided curative effects. Pains of the *bones*, even when most severe, are often very rapidly and effectually subdued; nay, when caries exists, a salutary change is not unfrequently obtained. Thus in Ozœna, complicated with disease of the palate or nasal bones, we seldom fail in greatly benefitting, if not in curing, the disease. In various tubercular affections of the *skin* and *mucous membranes*, the Ioduret will be found most useful. Deep ulcerations of the throat and pharynx, rhegades or fissures about the anus and nails, will not unfrequently heal up most satisfactorily, even when mercury has been previously tried and failed. It is sometimes truly marvellous to witness the decided improvement of the general health in the course of a few days, under the use of the Ioduret when judiciously administered. M. Gauthier considers that it is a most valuable remedy in many cases of mercurial cachexy: an iodurettted gargle will often serve to check salivation from this cause.

He invariably begins its administration in small doses—from two to four grains, or even less, twice a day. The quantity should be doubled every third or fourth day, until its reaches 15 or 20 grains. This dose should be continued for some time; but, if it fails in producing any decided effect upon the disease, it may be increased to two scruples or even a drachm. In a few cases, he has given as much as two drachms in the course of the twenty-four hours.

A solution of the Iodure in water, to which some tincture of Iodine has been added, may be advantageously used as a gargle in ulcerated sore-throat, and as a wash to ulcers on the surface, or on the Schneiderian membrane.

The average period, during which the internal use of the Ioduret should be continued, may be stated to be from six to eight weeks. Much will depend on the gradual increase of the doses given. Many cases will remain stationary, if the quantity of the salt administered be not progressively—and this, too, rapidly—augmented.—*Observations pratiques sur le Traitement des Maladies Syphilitiques par l'Iodure de Potassium, par M. L. Gauthier. Paris*, 1845.

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## ISOPATHIA, OR THE PARALLELISM OF DISEASES.

Dr. Harden of Georgia, U. S., applies the term *Isopathia** to express that law or

* "ισον παθος, æqua affectio. The term *isomerism*, in chemistry, while it furnishes an analogy in etymology, affords, also, a good illustration of our use of the above. It is known that there are many inorganic bodies with different external appearance, which consist of the same elementary parts, while others, essentially distinct in composition, present the same external form. To these last the term isomorphic has been applied; and even here the analogy holds in disease, for, as we have seen, there are many so-called diseases, with the same external form or type, so far as regards their seats and symptoms, which are still pathologically distinct. To such diseases the term *isotypic* might be very properly applied. Diseases, then, may be *isopathic* and *heterotypic*, or *isotypic* and *heteropathic*, as we hope to make appear in the course of our remarks."

general feature of disease, whereby "many symptoms and groups of symptoms, which have been and still are regarded as distinct diseases, and arranged as such by systematic writers, may be referred to the same pathological state of the system, and may mutually replace one another in the same or in different individuals."

The disposition of diseases to wear each other's livery has long been remarked by some of the most eminent physicians. Sydenham has expressly declared that "epidemics of continued fevers, although *resembling each other in respect to many of their symptoms and general characters, are often very different from each other*; for a mode of treatment which is useful in one, may be decidedly pernicious in another." Hence the importance which he has attached to the epidemic constitution of the air, in determining the true character of these diseases. Hunter declared that "diseases of the *same specific nature* not *only vary in their visible symptoms or actions*, but in many of *those that are visible*, arising, probably, from peculiarity of constitution and causes, which will make the effects of application vary almost in the same proportion." Dr. Alison says, "when changes in the structure of the body, that take place in the course of disease, are examined during life, and more especially after death, it appears that *different combinations of symptoms are often apparently excited by the same fundamental diseased action, and, consequently, found in connection with the same alteration of organic structure*; and again, that very *different alterations of structure may be attended, in different individuals, by symptoms, the greater number of which are very nearly the same*:"—and Andral, in his recent work on Pathological Hæmatology, has advanced the same sentiment: "These various facts," says he, "are not inconsistent with one another; they only throw more light on one of *the most important of medical truths*, namely, that two *diseases may have identical symptoms without being of the same nature*, and that, however close their resemblance, they may still require different modes of treatment, because very different conditions of the economy may give rise to or maintain them."

Dr. Harden very justly remarks that it has been, in a great measure, from the ignorance or neglect of this important physiological law, that so much discrepancy has existed among medical men as to the true nature and the proper treatment of the *same supposed disease*, as well as the varying success of the *same remedies in the same supposed cases*.

With the view of giving greater consistency and perspicuousness to his illustrations of the Isopathic law, he divides diseases into the following *generic* types, under which he proposes to treat of the individual species and their modifications. —1, Febrile types; 2, Inflammatory types; 3, Purulent types; 4, Tuberculous or Strumous types; 5, Scorbutic or Hæmorrhagic types; 6, Exanthematous types; 7, Hydropic types: and 8, Gouty or Podagric types.

In the present article, he confines his remarks to the class of Pyrexiæ, or Febrile diseases, which, we need scarcely say, afford numerous instances of isopathic connection. It must be confessed that the pathological history of this most common group is still very imperfectly understood. The discrepancy among authors in regard to the (alleged) seat of the same fever is sufficient evidence that this disease has no determinate or invariable locality nor primary "point de depart" in the system.

"If we were to judge," says Andral, "by post-mortem examinations only, we should often believe that inflammatory, bilious, catarrhal or mucous, typhoid or adynamic, nervous or ataxic, fevers were *one and the same disease*." It would be easy to quote a host of authorities to the same effect; but space will not permit this at present.

Fevers have been variously divided and arranged by different authors. The most generally adopted division has been into Intermittent, Remittent, and Continued. But there are several objections of great weight to this arrangement. For example, it is now pretty generally admitted that Intermittent and Remittent

fevers are only different *types* of the same disease. Many of the most able and practical writers within the last ten years have, in the most distinct and unqualified language, advocated this position. We shall select only one example. M. Maillot, the chief physician of the French Military Hospital at Bona in Africa, in treating of the fevers of Algiers, says: "Whoever will consider the facts now stated, cannot hesitate to admit that the Remittent and Continued fevers of the hot season, in such a climate as that of the Northern Coast of Africa, are in truth Intermittent fevers, complicated with some local mischief, which has the effect sometimes of merely obscuring the features of the original disease, and at other times of masking them altogether, so that they cannot be recognized;" and again, in speaking of the treatment to be pursued, he uses the following emphatic language:—"According to the opinion which we form of these Intermittent, Remittent, and Continued Fevers—which alternately succeed and replace each other, at one time disappearing, to break out at some future period,—and the connection which we may recognise to exist among them, however different they may often seem to be in their symptoms, will depend the choice of either a sound or a fallacious mode of treatment."

Dr. Rush was of opinion that the Tertian is the original type, and that the double tertian is really and truly the form in which all our (American) autumnal remittents present themselves, and that the difference in the intermissions depends upon the lengthening or shortening of the paroxysms, so that they either run into each other or have a complete interval between them.

By examining the successive periods or stages of a febrile attack, we shall be better enabled to point out various features of Isopathic connection. The degree of *coldness*, with which it is usually ushered in, varies exceedingly—from a mere slight sensation or "aura," in perhaps only one part of the body, to a universal shivering, and chill of the whole surface perceptible by another person. Now in some cases this may be the only symptom of the disease that is manifested—a slight chill that passes away, without being succeeded by other symptoms. Most medical men would probably regard such a phenomenon as nothing more than a slight hysterical feeling. The "aura epileptica" seems to be something of this kind.

The cold fit of an Intermittent may show itself by a torpor or oppression of the nervous system—varying in degree from a simple *drowsiness* to a state of complete *coma* or *apoplexy*. Fevers, associated with soporose, apoplectic and paralytic symptoms, have been described by writers of almost every country. Sydenham, Werlhoff and Morton appear to have been the first who regarded them as modifications of intermittents. "Some years ago, autumnal fever appeared in the interior of the Southern states (America) in this form, and was in many places denominated the *cold plague*." The Italian physicians have repeatedly described this form of the disease. This apoplectiform seizure may constitute the whole apparent disease; and if no time be given for the development of its true character, the case might be treated as one of Apoplexy, and the patient die under the treatment that would most probably be pursued. Andral has detailed the case of a patient who exhibited all the phenomena of "intermittent apoplexy," which in its turn observed the same regularity as the fevers of this name. The quinine was administered, and the individual quickly recovered.

The apoplexy may be replaced by some form of Paralysis—as hemiplegia, paraplegia, or local palsy. Dr. Macculloch has treated this subject at considerable length in his most interesting work on Remittent and Intermittent Diseases, and we cannot do better than refer the reader to it for information.

*Painful or Neuralgic Symptoms.*—The most usual seat of pain, in the early or cold stage of a febrile attack, is the back and head; and very often this pain is evidently of a neuralgic character. The alternation of the pain in the back with gastralgia, headache, or even with common neuralgia of the face, is a frequent

occurrence: we may therefore very reasonably suppose that the former is owing to some affection of the spinal nerves. In some cases, the pain is confined to one part: of this nature is the lumbago, sciatica, or hemicrania, that is often present. It is quite unnecessary to adduce authorities to prove that these and other forms of neuralgic suffering are very often connected with, if they do not actually arise from, the morbific cause of intermittent fevers, viz., malaria.

*Convulsive or Spasmodic Symptoms.*—The rigor with which Fevers usually set in, may be considered as of this character. The convulsive tremor may be either very general or local, either of a tonic or of a clonic character. The rigor is sometimes so indistinct as to be entirely overlooked; or it may be replaced by other symptoms, such as twitchings of the muscles in various parts of the body. These twitchings or spasms may be merely temporary and pass away without leaving any more serious disease; or they may become permanent, giving rise to such a muscular contraction as we see in Wryneck, Club-foot, &c. The "globus hystericus" is perhaps a symptom of a somewhat similar character. In some cases, a spasmodic Cough—probably connected with an irregular action of the diaphragm—has seemed to take the place of the rigor; for the accession of the febrile fit has usually set in with this symptom. In other cases, Asthma has been the substitute. The periodicity of the attack of the dyspnœa, and its arrest by the use of quinine, naturally lead to this conclusion. Dr. Macculloch is of opinion that one form of Pertussis may be symptomatic of marsh fever. Palpitation of the heart likewise may be of this character; and so may Hiccup. Pleurodyny, or stitch in the side, is unquestionably of an intermittent character in some cases. Spasm of the intercostal muscles is a very common affection among the Negroes in America; the pain in the side being the chief and most distressing symptom, while the febrile excitement may be obscure and imperfect.

By far the most alarming of the substitutional maladies that are apt to occupy the place of the cold stage of a remittent or intermittent, and are attributable to the same malarious origin, is Tetanus. Dr. Rush has expressly affirmed "that yellow fever sometimes puts on the form of tetanus." One of the most interesting examples is that published some years ago by M. Dance, and in which the tetanus assumed the intermittent type, and the accompanying fever exhibited sometimes a remittent and at other times a distinctly intermittent character.

Colic and vomiting, in certain localities and epidemics, are not unfrequently observed in lieu of the regular shivering of the first stage of a febrile paroxysm. Dr. Macculloch remarks that the latter (vomiting) sometimes "becomes the most conspicuous symptom, or even the only one which the patient may notice; yet inattentive practitioners are subject to mistake it for an original disease, dependant upon some mysterious cause, or to assign a wrong one for it."

In children, Convulsions so frequently occupy the place of the rigor of a febrile attack, that Dr. Harden does not hesitate to lay it down as a rule that *the rigor of an adult is the convulsion of a child in our climate fevers.* There is reason for believing that even in adults the rigor may sometimes assume the violent form of an Epileptic paroxysm; and it appears not improbable that some of the forms of Hysteria might be robbed of half their mysterious character, by studying them in connection with intermittent fevers. Dr. H. suggests that Laryngismus Stridulus also may occasionally be a modification of the rigor of an agueish fever.—*The American Journal of the Medical Sciences*, No. XVI.

(A very valuable paper on an interesting subject. We trust that Dr. Harden will follow it out.)

## On the Nature of the Black Vomit in Yellow Fever.

Dr. Nott of Mobile—not far from New Orleans—has communicated an instructive paper, to the American Journal of the Medical Sciences for April 1845, on the "Pathology of the Yellow Fever," as observed by him in that town and district. He regards this most formidable disease as produced by the introduction into the system of a morbific miasm, the effect of which is to vitiate and corrupt all the fluids of the body. He is therefore a decided Humorist in his pathological views, utterly rejecting and emphatically denouncing the pernicious doctrine of Broussais and his followers, who would make but little difference between the Pyrexiæ and the Phlegmasiæ. "It has become"—he says with great force and truth—"the fashion to speak of yellow fever becoming '*localized*;' but to my mind it is just as rational to say, that a storm has '*localized itself*,' because it blows down a tree here and there, whilst it is shaking the whole forest to its foundations. That the yellow fever does, in the course of its progress, like all great epidemics, give rise to morbid changes in particular organs, no man of sense will deny; such effects are to be expected from all poisons which pass into the blood, or act in any way on the system. Sometimes in this disease there is gastritis; the liver is often changed in a remarkable degree; the kidneys are found altered in colour and texture; the lungs show dark patches; the brain is congested; bloody tumours form; the secretions are checked; the texture of the skin so changed that I have seen (as in the case of Capt. Atwood, last summer,) the cuticle, in attempting to cleanse the face with a wet towel, wiped off, and the skin left as raw as a blistered surface, and this too twelve hours before death." All that we propose at present is to give Dr. Nott's views on the origin and nature of the "black vomit." The following extract will best convey his sentiments on this subject:—

"With the assistance of my friend, Dr. P. H. Lewis, I have tested the black vomit in a considerable number of cases this summer (1844,) and in every instance I have found it to be acid; when ejected from the stomach during life, it invariably turned litmus paper red, and the aqueous portion of that, which was taken from the stomach after death and filtered, in several cases effervesced strongly with carbonates. The aqueous portion, thus filtered, differed in colour; in some it was perfectly limpid like water; in one, of a light green colour like dilute bile with an acid added; and in others, it was of a deep brandy or rum colour; which appearance was no doubt given by a small admixture of blood.

"The secretions of the stomach in yellow fever are often excessively irritating, and this property is probably attributable to the presence of acid; the patient often complains in the black vomit stage of a burning or scalding sensation in the stomach, which is immediately relieved by throwing off its contents. The patient, too, often complains of the black vomit scalding the œsophagus, which, after death, is usually found more or less denuded of its epithelium. The acidity of this secretion may possibly account for many of the morbid changes in the stomach and œsophagus. A morbid secretion of tears will scald the cheek; mucous from the nose inflame the lip; morbid secretions from the bowels excoriate the anus; morbid bile irritates the stomach and bowels, &c.—and we know that the gastric juice will often corrode the stomach in a short time after the extinction of life.

"The next step was to ascertain whether acids would with blood produce a compound with the characters of black vomit. I accordingly took a few drachms of blood from the heart of a patient dead of yellow fever, and added to it four or five drops of muriatic acid, diluted with a drachm or two of water, and shook them well together; the black colour was produced instantly. The same experiment was tried repeatedly on the blood of yellow fever patients, and on that drawn from a patient with pleurisy by cupping, and the effect was invariably the same.

"Any one wishing to form a correct idea of black vomit, has only to treat blood in this way, and add a little gum-water or flax-seed tea to represent the mucus of the stomach, and his curiosity will be gratified; no one can tell the artificial from the genuine black vomit."

With respect to *treatment*, Dr. Nott very justly remarks that, what may be proper and salutary in one Epidemic of the Fever, may prove most pernicious in another. "He, who is ignorant of the various types, in which this Proteian disease appears in different years and in different latitudes, must either not have read, or read to little purpose, the history of Yellow Fever. In one epidemic we are told that the lancet is the sheet-anchor; in another, it is death. This difference occurs to a limited extent in Mobile; but the rule is, *beware of the lancet.*"—*Ibid.* No. XVIII.

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### ON THE DEPOSITE OF CARBON IN THE SUBSTANCE OF THE LUNGS.

The following remarks are intended to illustrate the nature of that black matter that is met with, almost constantly, in the respiratory organs of old persons. All the cases that have been examined by me, says Dr. Guillot, physician of the Hospice de la Vieillesse at Paris, have occurred in men above 70 years of age; and in not a single instance had the patient followed any trade, the pursuit of which necessarily exposed him to the inhalation of carbonaceous particles. Most of my patients had been coachmen, gardeners, bakers, and so forth. Although, as might be expected at such an advanced period of life, one or more of the viscera were generally found on dissection to be diseased, the cause of death in the majority of cases was unquestionably due to the more or less rapid and complete interruption of the aerial or sanguineous circulation of the lungs, in consequence of the carbonaceous deposit in the pulmonary parenchyma. It has only been since the beginning of the present century that the attention of pathologists has been specially directed to the examination of those black deposits, that are so frequently met with in this structure.

Various opinions have been entertained by different pathologists as to their nature. Bichat* regarded them as minute bronchial glands; Breschet,† as formed by the exhalation of the blood into the fatty cellules or utricles; Heusinger,‡ as deposits of a carbonaceous pigmentary substance, the result of the imperfect oxydation and decarbonisation of the blood; Trousseau,§ as produced by cruoric globules. According to the latter gentleman and M. Andral.‖ the deposition is the result of a secretion; it is regarded by Andral and Grisolle¶ as connected with the existence of chronic pneumonia; while Laennec,** Gregory†† and others have traced it to the inhalation of sooty and carbonaceous particles from a smoky atmosphere. Berard‡‡ says that "the black matter of the lungs, which is not blanched either by chlorine or by nitric acid, owes its dark colour to carbon;" and more recently M. Bourgery§§ alludes to it as "a veritable deposit, apparently

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* Traité d'Anatomie Descriptive, t. iv. p. 22, Ed. 1839.

† Considerations sur une Alteration Organique appelée Degenescence noire, Melanose, &c., 1821.

‡ Recherches sur la Production Accidentelle de Pigment et de Carbon dans le Corps Humain, &c. Eisenach, 1823.

§ Archives Generales de Medecine, t. xvii., 1828.

‖ Precis d'Anatomie Pathologique, t. i. p. 459.

¶ Traité Pratique de la Pneumonie à ses differents Ages.

** Traité de l'Auscultation, t. ii. p 312, et seq.

†† Ed. Med. and Surg. Journal, 1831.

‡‡ Texture et Developpement des Poumons, 1836.

§§ Notice sur les Titres de M. Bourgery, 1845.

carbonaceous, and analogous to the deposit that lines the chimneys of our fire-places."

Dr. Guillot is of opinion that every one of these opinions is more or less faulty, and he undertakes to prove—

1. That the black matter, so often found in the lungs of old persons, is not formed by the blood or by the cruoric particles, as Breschet and Trousseau have supposed;—neither is the result of any process of secretion, according to the opinion of Andral—nor has any analogy with the pigment of the skin or choroid coat—nor yet is owing to the inhalation of a smoky atmosphere.

2. That it is really and truly of a carbonaceous nature; but that the carbon is not derived from the process of chemical re-agents, but is deposited "en nature," during the continuance of human life, in the parenchyma of the respiratory organs.

3. That the presence of this carbon, by its gradual increase, may occasion—chiefly in the more advanced periods of life—certain morbid phenomena that are appreciable by the physician.

4. That the accumulation of this matter may be so extensive in the lungs as to cause death, by impeding the circulation and respiration; and that, in many cases of acute or chronic pulmonary disease in old people, the presence of these carbonaceous deposits adds considerably to the danger, and may account for the frequent fatality, of the pneumonic attack.

Dr. Guillot adds that these carbonaceous deposits appear to have considerable influence on the various modifications which tubercles undergo in certain constitutions: "the majority of patients," says he, "in whom the progress of Phthisis has been modified or arrested, exhibit in their lungs on dissection, if they have reached an advanced period of life, a more or less extensive deposit of carbonaceous molecules."

Dr. G. has given the particulars of some chemical experiments, performed by M. Melsens, to ascertain the nature of melanotic matter obtained from the lungs. The result of them was clearly to shew that it is of a truly carbonaceous nature.* On one occasion Dr. G. found, in the lungs of an old man, a compact mass of carbonaceous matter arranged in layers; it was black, very hard, having a shining metallic fracture, infusible, burning on a platinum plate without flame, and without giving out almost any smell. This matter, when burnt in a stream of oxygen gas, yielded nothing but water and carbonic acid.

The state of extreme division of this carbonaceous matter, as it is obtained by treating the lungs successively with acids, alkalis, water, alcohol and æther, enables us in a measure to form an idea of the hardness which in some cases it may acquire. It has been known to exhibit a brilliant aspect and the metallic lustre of the carbon, that is obtained from the decomposition of spirit of turpentine in a porcelain tube heated to redness.

We have already said that the deposit of melanotic matter in the lungs is almost peculiar to old age. Certain it is that it is rarely or never met with in infancy and youth; no appearance of it being usually discoverable until about the period of middle life. At first it looks (we require the microscope for this purpose) like a very fine black powder, sprinkled through the transparent substance of the pulmonary tissue. This powder is found to be constituted by the assemblage of excessively minute granules, separated more or less completely from each other; the intervals between them becoming less and less, as the amount of the deposit increases. The molecules seem to be quite impervious to the light; for, even under a high magnifying power, they look as intensely black as when seen with the naked eye.

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* *Recherches Chimiques sur la Matiere des Melanoses*; Compte Rendu des Seances de l'Academie des Sciences de Paris, t. xix. p. 1292.

The extent which these molecular deposits may occupy in the centre or on the surface of the lungs, is sometimes immense. In some cases, the pulmonary tissue is so deeply stained, that we can readily observe the accumulation of the black matter with, or even without, the aid of a lens, by placing a portion of the lung in pure water. Dr. G. is of opinion that the seat of the carbonaceous deposit is in the intervesicular or inter-canalicular spaces of this tissue, and not on the mucous surface of the extreme air-tubes. At this early stage, there is usually no other morbid alteration or abnormal condition of the pulmonary tissue discoverable. But when the quantity of the deposit is considerably increased, certain modifications, either of the air-tubes or of the minute blood-vessels, or of both, are usually observed to have taken place. These modifications are obviously the result of compression upon these parts, in consequence of the accumulation of foreign matter in their neighbourhood: the air-vesicles or tubules are obstructed, and the blood-vessels are rendered impervious. It is usually in the upper lobes of the lungs that the amount of carbonaceous deposits is most considerable: there is always a less amount in the lower, than in the upper and middle lobes. When there is a considerable deposit near the pleural surface of the lung, there is very generally the appearance of a dark-coloured cicatrix at this point—a feature that has often been mistaken for the trace left by the cicatrised vomica: It arises from the solidification of the pulmonary tissue, in consequence of the accumulation of carbonaceous matter underneath.

The melanotic deposit may be either diffused in small molecules over a wide extent of the lungs; or it may be accumulated in nuclei or masses, varying in size from that of a hemp-seed to that of a walnut or even of an orange. Dr. G. gives the following description of the appearances which he has sometimes met with on dissection, when the accumulation has been considerable.

"The rest of the pulmonary substance, deprived of its air-tubes and blood-vessels, forms then a sort of *gangue* which resists the edge of the knife, is sometimes very much indurated, inelastic, not unlike a piece of moistened pasteboard that has been stained dark, or to leather that has been boiled in water loaded with smoke-black. Those very abnormal matters, in the midst of which the carbon is contained, do not lose their dark colour upon washing; they putrefy very slowly; and even in the act of decomposition, they continue to retain the black stuff with which they are penetrated. It thus appears that the charcoal is not to be separated by washing. Whatever be the force of the stream of water used, or the degree of putrid dissociation of the elements of the affected tissues, it requires a still more powerful action—one that is capable of entirely destroying their organisation, without acting upon the carbon—to enable us to procure it by itself."

Occasionally we find that, in the centre of one of these masses of carbonaceous matter, there is a space occupied with black matter that is in a diffluent state, and which may be washed out with a stream of water, so that there is left behind a cavity proportionate to the extent of the *ramollissement*. When this dark fluid is examined with the microscope, it is found to be loaded with carbonaceous particles, which exhibit the same chemical characters as the ordinary melanotic deposits do.

Dr. G. says that he has never seen a case wherein the melanotic matter was truly encysted, or continued in a distinct cyst or sac. This peculiar feature, and the circumstance too of the matter always having a molecular composition, may serve to distinguish this morbid formation from others of a similar appearance, occasionally found in the brain, liver, kidneys, &c. From repeated most careful examinations with the microscope, he is quite satisfied that the carbonaceous deposits have nothing to do, nor are in any degree connected, with the extravasation of blood in any form.—*Archives Generales de Medecine.*

## ON THE PELLAGRA, AS OBSERVED IN FRANCE.

This disease having of late years prevailed to a considerable extent in the valley of the Gironde, the French minister of public instruction wrote, some time ago to the Academy to have a report upon certain documents that had been transmitted to him on the subject.

It was in 1829 that Pellagra was first distinctly noticed in the "landes" of that district of France. As seen and described by Dr. Marchand, its most conspicuous feature is a squamous erythema of the exposed parts of the body, more especially of the backs of the hands, returning periodically every year in the spring, and accompanied by a series of constitutional symptoms, the severity of which is always proportionate to the persistence of the disease. The eruption—which may be successively papular, vesicular, and pustular—usually disappears in autumn, leaving patches having a shining aspect like that of a cicatrised burn. The constitutional symptoms appertain chiefly to the digestive and the cerebro-spinal systems. Hence Dr. M. characterises them by the appellation of *gastro-entero-rachialgia*. There is usually redness and a fissured state of the lips and tongue, a scorbutic condition of the gums, ptyalism, anorexia, vomitings and diarrhœa. The nervous symptoms are exceeding weakness, vertigo, languor of the sensual and the intellectual perceptions, sometimes delirium and even insanity,—which generally assumes a form of monomania, leading the unhappy sufferer to commit suicide by drowning. The patient becomes weaker and weaker, occasionally dropsical, and at length dies from exhaustion. Dissection has thrown but little light upon the real pathology of this disease. The essential cause of it seems to be misery and destitution, coupled with exposure to a burning sun and an unhealthy atmosphere. Well and truly may it be designated *mal de misere*. In Lombardy it is sometimes called *alpine scurvy*, and in Spain *mal de la rosa*—from the erythematous redness of the skin, we presume. In France, it has been chiefly observed among the poor that inhabit the districts of Gascony near the shores of the Gulf. The country is most barren and insalubrious, and the people are altogether in a wretched condition.

In endeavoring to find out the probable chief causes of the Pellagra, it is of importance,—says M. Jolly, the reporter of the commission—to bear in mind that the disease is not known to have existed previous to the first half of the last century; and moreover, that it is never observed to exist in many countries where the solar heat is much greater than in those parts of Europe where it has been found to prevail. Still, there are several facts to shew that exposure to the sun's rays has much to do with its production. The simple circumstance of the decline of the disease in autumn, and of its recrudescence in spring, proves this to be the case. It is obvious, however, that, if the skin and general system were in a healthy condition, this effect would not be produced: it is only the tree, that has lost its sap, that is liable to have its bark dried up by the heat of the summer sun. M. Jolly is induced to believe that there is some etiological principle endemic in the localities affected, and inherent in the material life of the country. Everything would seem to point to the nature and productions of the soil, and the quality of the food and drink, as the true sources of this morbific principle.

By a curious coincidence, at the very time that M. Jolly was engaged in preparing his Report on the official documents respecting the Pellagra in the south-western parts of France, M. Roussel had transmitted to the Academy a thesis on the same subject, the chief object of which is to trace out the causes, and the geographical limits of the disease. According to his researches, it would seem that it was not until about the middle of the eighteenth century that the Pellagra made any considerable ravages in Italy, although it had been known for forty or fifty years before. In Spain it seems to have been longer known; whereas, in France, it was not observed until the year 1818. M. Roussel, following out his

enquiries, has come to the conclusion that the almost exclusive alimentation of the inhabitants upon Maize, and the deficiency or total want of other more nourishing food, has much to do with the production of the disease.

He adduces various considerations in support of this view; these considerations are derived in part from observing the geographical limits of the Pellagra, and in part also from the chronological history of the culture of the maize. "I have been much struck," he remarks, "with the exact correspondence of historical data on this point with those as to the origin and early development of the disease in different countries.

"It is thus that in Spain, if any doubt exists as to the precise time of the introduction of the maize, there is certainly none that its cultivation in the north of the Peninsula did not become at all important till the seventeenth century. Now, it has been shewn that Spain is the first country where the Pellagra was really known in the first half of the eighteenth century.

"In Italy, the connection between the cultivation of the maize on the one hand, and the appearance of the Pellagra on the other, is established upon sufficient data. It is only since the end of the seventeenth, and especially during the first half of the eighteenth centuries that the cultivation of the maize has gradually prevailed and replaced that of other cereal grains. Now we know that it was towards the year 1750 that the Italian physicians began to meet with the Pellagra.

"In France, although the maize was known in the time of Olivier de Serres this grain did not acquire any importance till a very recent period; and we have seen that the date of the first case of the disease does not extend further back than 25 or 30 years ago."

Such are some of the statements of M. Roussel: the subject, it must be confessed, requires much more accurate information than we yet possess, before we can arrive at any definite conclusions. It deserves, however, to be noticed that Maize is, of all cereal grains, that which affords the least azotised aliment, and whose harvests are perhaps the most frequently damaged.

In confirmation of M. Roussel's views, we may state that, so far back as 1798, Thouvenel, in his work on the Climate of Italy, pointed out the striking conformity between the period when the cultivation of the Maize had extended into Southern Italy, and that when the Pellagra had begun to make its appearance there; and, at the late scientific meeting at Milan, Dr. Balardini adduced many potent arguments to prove this very point of enquiry, shewing at the same time that the disease was not at all known in those districts, where the Maize did not constitute the food of the inhabitants. Indeed, so strongly convinced are many Italian physicians of the connection between the origin of the Pellagra and the use of this grain, as the chief article of food, that they have affixed the name of *raphania maiztica* to the disease.—*Gazette Medicale.*

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## NOTE ON THE ADMINISTRATION OF THE OXYDE OF SILVER.

In our review of Sir James Eyre's "Practical Remarks," we have omitted to state that, it is to Mr. Lane that the profession is mainly indebted for the introduction of the Oxyde of Silver as a useful remedy in various ailments—pyrosis, cardialgia, leucorrhœa, &c. Mr. Lane's first communication upon the subject will be found in the Number of the Medico-Chirurgical Review for July, 1840, and well deserves to be generally known.

# BIBLIOGRAPHICAL RECORD.

1. A Collection of Cases of Apoplexy, with an Explanatory Introduction. By EDWARD COPEMAN, Surgeon. 8vo, pp. 211. Churchill. 1845.

2. The Diagnosis, Prevention, and Treatment of Diseases of the Heart and of Aneurism, with Observations on Rheumatism By J. J. FURNIVALL, M.D. 8vo, pp. 224. London, 1845.

3. The general Nature and Treatment of Tumours. By GEORGE MACILWAIN. 8vo, pp. 231. Churchill, 1845.

4. On the Remedial Influence of Oxygen or Vital Air, Nitrous Oxide, and other Gases, Electricity and Galvanism. By J. EVANS RIADORE, M.D., F.L.S. 8vo, pp. 185. Churchill, 1845.

5. Observations on the Growth and Irregularities of Children's Teeth followed by Remarks and Advice on the Teeth, in general; to which is added, a short Essay on Artificial Teeth. By W. H. MORTIMER. 12mo, pp. 141. London, 1845. Highley.

6. The Structure of the Lungs, anatomically and physiologically considered with a view to exemplify the Wisdom, Power, and Goodness of God, as revealed and declared in Holy Writ. The Warnford Prize Essay for the Year 1844. By JOHN MOORE.

7. A System of Surgery. By J. M. CHELIUS. Translated from the German, with Notes and Observations, by J. F. SOUTH, Surgeon to St. Thomas's Hospital. 8vo, Parts I. to III. Renshaw, 1845.

8. A Physiological Essay on the Thymus Gland. By JOHN SIMON, F.R.S. 4to, Plates, pp. 116. London, Renshaw, 1845.

9. The Power of the Soul over the Body considered in Relation to Health and Morals. By GEORGE MOORE, M.D. Pp. 313. Longman & Co. 1845.

10. Practical Observations on the Diseases most fatal to Children; with reference to the Propriety of treating them as proceeding from Irritation, and not from Inflammation. By P. HOOD. Post 8vo, pp. 231. Churchill, 1845.

11. On Diseases of the Jaws, with a brief Outline of their Surgical Anatomy, and a Description of the Operations for their Extirpation and Amputaion, with Cases and Illustrations. By RICH. O'SHAUGHNESSY. 8vo, pp. 100. Calcutta, 1844.

12. Observations on the Education and Examinations for Degrees of Medicine, as affected by the New Medical Bill, in a Letter to the Right Hon. Sir James Graham, Bart. By RICHARD QUAIN, F.R.S. 8vo, pp. 60. Murray, 1845.

13. Contributions to the Medical History and Treatment of Sexual Diseases. By JOHN H. ROBERTSON, M.D. 8vo, pp. 80. Glasgow, 1845.

14. Glanders and Farcy in the Horse. By WILLIAM PERCIVAL, M.R.C.S. Being the second and concluding Part of Vol. III. of the Author's Hippopathology. 8vo, pp. 199. Longman & Co. 1845.

15. The London Medical Directory for 1845: containing the Name, Address, Qualifications, Official Appointments, and Literary Productions of every Physician, Surgeon, and General Practitioner resident in London. 12mo, pp. 188. Churchill.

16. The British American Journal of Medical and Physical Sciences. Edited by ARCHIBALD HALL, M.D. Edinb. Montreal, 1845.

17. A Practical Treatise on the Special Diseases of the Skin, with Cases and numerous Notes collected from the best Authors. By C. M. GIBERT, Physician to the Hôpital St. Louis, &c. Second edition, enlarged. Translated by EDGAR SHEPPARD, 12mo, pp. 362. Churchill, 1845.

18. Manual of Agricultural Analysis. By JOHN MITCHELL. Small 8vo, pp. 143. London, 1845. Simpkin & Marshall.

19. The Physiological Anatomy and Physiology of Man. By R. B. TODD, M.D., F.R.S., and W. BOWMAN, F.R.S. Part II. 8vo. pp. 248. Parker, 1845.

20. Pulmonary Consumption successfully treated with *Naphtha*, with cases from other Medical Men in support of that Treatment. Second edition, revised and enlarged. By JOHN HASTINGS, M.D. 8vo, pp. 264. London, 1845.

21. A few Remarks addressed to the Public on Hydropathy, or the Cold Water Cure, and other Panaceas. By W. F. SOL-

TAU, M.B. 8vo, pp. 72. Hamilton, London, 1845.

22. Hints to Mothers on the Management of Females at the Age of Puberty. By JONATHAN TOOGOOD. 8vo, pp. 20. 1845.

23. Transactions of the Provincial Medical and Surgical Association. New Series. Vol. I. 8vo, pp. 426. Churchill, London. 1845.

24. Observations on Friction Vibrations in Peritonitis. By ROB. SPITTAL, M.D., F.R.S.E. 8vo, pp. 20. 1845.

25. Annual Report of the Medical College of Bengal. Session 1844–5.

25. Observations on the Employment of Compression in Aneurism. By O'B. BELLINGHAM, M.D. 8vo, pp. 14. Dublin, Hodges and Smith. 1845.

27. Vital Chemistry.—Lectures on Animal Heat. By THOMAS SPENCER, M.D. 8vo, pp. 114. Geneva, N. Y. 1845.

28. Outlines of Chemistry, for the Use of Students. By WM. GREGORY, M.D. Part II. Organic Chemistry. 12mo. pp. 588. London, Taylor & Walton. 1845.

29. American Journal of the Medical Sciences. Edited by ISAAC HAYS, M D. 8vo, pp. 532. Philadelphia, Lea and Blanchard. 1845.

30. Sixth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England. 8vo, pp. 666. London, 1845.

31. Report of the Sanatory Condition of Nottingham, Coventry, Leicester, Derby, Norwich, and Portsmouth. By JAMES R. MARTIN, Esq. Folio, pp. 58.

32. The Veterinarian, Nos. for January to June, 1845.

33. Annual Report of the Managers of the State Lunatic Asylum, 1845. Albany, 8vo, pp. 53.

34. The Sanatory Condition of the Laboring Population of New-York. By JOHN H. GRISCOM, M.D. 8vo, pp. 58. New-York, 1845.

35. Remarks on Physicians, Surgeons, Druggists, and Quacks. By Surgeon SNIPE. 8vo, pp. 65. London, Highley. 1845.

36. Chemistry, Meteorology, and the Function of Digestion, considered with reference to Natural Theology. By WILLIAM PROUT, M D., F.R.S. 8vo, pp. 515. London, Churchill. 1845.

37. The Irish Watering Places, their Climate, Scenery, and Accommodations, including Analyses of the Principal Mineral Springs. By Dr. R. KANE; and Remarks on the various Forms of Disease to which they are adapted, by ALEX. KNOX, M.D. Small 8vo, pp. 332. Dublin, Curry & Co. 1845.

38. Spinal Affections and the Prone System of treating them. By JAMES COLES, Surgeon. 12mo, pp. 320. London, Houlston & Co. 1845.

39. Seven Lectures on Somnambulism. Translated from the German of Dr. ARNOLD WIENHOLT. By J. C. COLQUHOUN. 12mo, pp. 219. Edinb. Black & Co. 1845.

40. Prize Chemical Report of Surgical Cases treated at the Queen's Hospital, Birmingham. By JOHN MOORE. 8vo, pp. 65. Churchill, 1845.

41. Practical Notes on Insanity. By J. B. STEWARD, M.D. 12mo, pp. 122. London, 1845.

42. The Quarterly Medical and Surgical Journal for the North-western Provinces. Nos. 1, 2, 3, & 4, for 1844. Delhi, 1845.

We hail with pleasure this new accession to periodical literature, edited and published in the centre of India! In our next number we intend to offer copious extracts from the work. We shall be happy to exchange Journals through the medium mentioned.

43. Pathologia Indica, or the Anatomy of Indian Diseases, Medical and Surgical, based upon Morbid Specimens from all Parts of India in the Museum of the Calcutta Medical College. Illustrated by Cases, &c., and Comments, Physiological, Practical, and Historical. By ALLAN WEBB, B.M.S., &c. Part I. Calcutta, Carey & Co. 1844.

44. Transactions of the Medical and Physical Society of Bombay. Part VI. Bombay, 1843.

45. Des Hallucinations, ou Histoire raisonnée des Apparitions, Visions, Songes, de l'Extase, du Magnetisme et du Somnambulisme. Par A. BRIERRE DE BOISMONT. 8vo, pp. 615. Paris, 1845. Bailliere.

46. Lectures on Subjects connected with Clinical Medicine, comprising Diseases of the Heart. By P. M. LATHAM, M.D., Physician Extraordinary to the Queen, &c. Vol. I. pp. 374. London, 1845. Longman & Co.

47. On Cataract and its appropriate Treatment. By CHARLES G. GUTHRIE. 8vo, pp. 127. London, 1845.

# THE MEDICO-CHIRURGICAL REVIEW.

OCTOBER, 1845.

I. First Report of the Commissioners for inquiring into the State of Large Towns and Populous Districts. Folio, 1844.

Second Report of the Commissioners for inquiring into the State of Large Towns and Populous Districts, with Appendix, Parts 1 and 2. Folio, 1845.

II. A Bill for the Improvement of the Sewerage and Drainage of Towns and Populous Districts, and for Making Provision for an Ample Supply of Water, and for otherwise Promoting the Health and Convenience of the Inhabitants. Prepared and brought in by the *Earl of Lincoln* and Sir *James Graham*. 25th July, 1845.

III. Report of the Surveyor-General of Prisons on the Construction, Ventilation, and Details of Pentonville Prison. 1844.

IV. Contributions to Vital Statistics, being a Development of the Rate of Mortality and the Laws of Sickness, from original and extensive data, procured from Friendly Societies, showing the Instability of Friendly Societies, "Odd Fellows," "Rechabites," &c., with an Inquiry into the Influence of Locality on Health. By *F. G. P. Neison*, F.L.S., &c. Actuary to the Medical Invalid and General Life Office. 4to. pp. 140 London, 1845.

V. Pamphlets published by the Health of Towns Association: Abstract of the Proceedings of the Public Meeting; Speech of the Marquis of Normanby in the House of Lords on moving an Address to the Crown on the Sanitary Condition of the People; Suggestions for forming Branch Associations. By *Robert A. Slaney*, Esq.; Unhealthiness of Towns, its Causes, and Remedies. By *R. D. Grainger*, Esq., Lecturer on Physiology at St. Thomas's Hospital.

VI. Letters on the Unhealthy Condition of the Lower

CLASS OF DWELLINGS, ESPECIALLY IN LARGE TOWNS. By the Rev. *Charles Girdlestone*, A.M. Rector of Alderly, Cheshire. 8vo. pp. 92. London, Longman and Co. 1845.

VII. FACTS CONNECTED WITH THE SOCIAL AND SANITARY CONDITION OF THE WORKING CLASSES IN THE CITY OF DUBLIN. By *Thomas Willis*, F.S.S. 8vo. pp. 59. Dublin, J. O'Gorman, 1845.

IT is a painful but unquestionable truth, that so far from the happiness and well-being of the population of England having increased with the daily augmenting wealth of the nation, there has been almost pari passu, a fearful diminution in the material comforts of the people and a corresponding amount of suffering, sickness, and death. We more especially allude to the inhabitants of our manufacturing towns, though in many of the rural districts the population have not escaped this physical degradation. Those who look only on the surface of society and measure the national prosperity by the property of the country as indicated by the increased imports and exports, by the returns of the income tax, and by the general progress of luxury among the higher and even middle ranks of society, may still congratulate themselves that all is well, and that the poor man's hearth shares in some degree in those excessive riches which are at once the envy and the marvel of the world. Would that it were so, and that those who by their unequalled skill and unmatched industry create the country's wealth, reaped in the comfort of themselves and of their families the just reward of their unceasing toil. It is not, however, the first time in the history of the world, that enormous wealth in the hands of the few, has been accompanied with the direst sufferings on the part of the many; nor that unbounded luxury has been seen side by side with squalid wretchedness. The state of things at this time existing in England is powerfully depicted by one thoroughly acquainted with the condition of the manufacturing districts, the Rev. John Clay, of Preston, from whose admirable report we extract the following passage:—

"We endeavour to civilise distant people by winning their confidence, by striving to develop the better qualities of their nature, by promoting intercourse with them, and making them alive to its benefits. The same measures are needed at home, where the moral and intellectual extremes of society are as far asunder as if separated by untrodden deserts or untried seas. This mental remoteness and local propinquity cannot long co-exist without change; a great community is never stationary; there is always a tendency upwards or downwards, according as the few above or the many below exercise influence; while, independent of the movement of the general body, there are ever some individuals sinking, and, happily, more successfully struggling to rise. But the great mass is yet chaotic; and unless, by God's blessing, breathed upon the spirit of intelligence, and of order, and of religion, it may be hurled upon all that is fair and good among us, with a momentum as sudden as irresistible."—*First Report*, *Ap. Part* 1, p. 55.

To the medical observer, whose duties bring him in immediate and daily contact with the poor and suffering, the sad disclosures made by the successive Commissions, which have investigated the actual condition of our manufacturing population, will only present an aggregate view of that pervading misery, with which, in detail, he has unhappily been so long

familiar. But to the influential classes of society in general, it is impossible to conceive of any descriptions more startling, or more calculated to humble the national pride, and to stimulate to national amelioration, than the frightful evils depicted in the Reports and Evidence of the Health of Towns Commission. The curtain which has so long screened from the public eye the almost inconceivable afflictions of the manufacturing poor has at length been raised, and what is presented, not only to the gaze of this country, but to the contemplation of the civilized world:—a population sunk alike in physical suffering and moral debasement; deteriorated in stature, enfeebled by sickness, and fearfully curtailed of the allotted years of human existence. This is strong language, but it is justified by the unparalleled sufferings of hundreds of thousands of our fellow-countrymen, who are doomed, in the midst of civilized and Christian England, to live a life compared with which the existence of savage and heathen tribes may, as to material comforts, be termed happy. Can any words, for example, be too forcible to characterize a state of things, in which, out of 100,000 human beings born in Liverpool, in Manchester, or in Birmingham, upwards of 50,000 perish under five years of age; or in which an "artizan reaches only 15 years of age, and has 28 years less chance of life than the gentleman." Well may the inhabitants of the crowded courts and alleys of our great cities exclaim with the inspired writer "few and evil have been the days of my life."

The unhappy combination which we have noticed of increasing misery with increasing wealth, is well stated and elucidated by the Marquis of Normanby, in the speech delivered at the formation of the Health of Towns Association. That nobleman, whose strenuous and persevering exertions in the cause of Sanitary improvement are deserving of the highest praise, asks—

"How then did it happen that such a state of things as was exhibited in the reports recently laid before the legislature had been permitted to grow up? His own attention had been first fixed upon the subject in consequence of particular opportunities for observing the details which had occurred to him during the time he had had the honour to hold a high public office. But from that time he had never felt more strongly than at the present moment the conviction, not only that nothing had been done to remove these terrible evils, but that they were actually in a state of daily increasing virulence; and taken, as they must be, in connexion with other circumstances in the social condition of the poorer orders, they gave room for a well-grounded anxiety for the permanence of our national greatness. The most striking instances of the deterioration of physical strength were to be found in the districts where the greatest social changes had taken place within the last thirty years—where the investment of capital and the development of mechanical discoveries had collected a large population together, without an attempt being made to secure their physical well-being. But yet there is scarcely a district exempted from some share in the charge of such neglect. If they turned their glance upon the metropolis, it was not the busy east alone which was obnoxious to it, for in the neighbourhood of the well-ventilated squares of the west there were dense courts and alleys containing within themselves the seeds of disease germinating there, ready to spread their baleful influence around. All this was disgraceful and dangerous."

"The county of Lancaster stood foremost in bad pre-eminence amongst unhealthy counties; but it must be recollected that, in making calculations derived from an extensive district, the comparison was much weakened by there being

necessarily a large admixture of a population of a different and sometimes opposite description from that which gave it its peculiar character. In some respects, however, distinct from health. Lancaster had gained greatly; for he saw, by the returns upon the last repeal of the income tax, there had been an increase of property in that county as compared with the present time, of 136 per cent. It would be imagined, then, that this was a district in which prosperity most generally prevailed. How was the fact? At the time of the census preceding that repeal of the income tax, the rate of mortality was one in fifty on the whole kingdom. Now the rate of mortality was one in forty-five. How did this happen? How would they account for this diminution of the physical strength of the nation in the face of increased wealth, of improved science in the art of healing diseases, and of improved moral and temperate habits among the people? To solve the difficulty, they must point to particular districts of the country, note the statistical facts, and draw their inferences. The mortality in Lancashire thirty years ago was one in forty-six, or less than the general average of England at the present moment. Now the mortality in that county was one in thirty-six. Still there was a difference in the mortality as regarded different districts in the same county. The value of life in Ulverstone, for instance, is stated by Dr. Playfair to be double what it is in Manchester—Manchester which, as he says, enjoys the unenviable notoriety of being the second unhealthy town in the kingdom, and where the mortality was, upon the most favourable estimate, 1 in 28."—*Abstract of Proceedings of the Public Meeting held at Exeter Hall, p.* 6.

We have here disclosed the secret of the apparent anomaly we are considering:—"the investment of capital and the development of mechanical discoveries have collected a large population together, *without an attempt being made to secure their physical well-being.*" It is not our wish to hold up the great capitalists and employers of the manufacturing districts to special rebuke; they have only shared in common with the lords of the soil, and we must in justice add, with all the wealthy and influential classes, in that apathetic and selfish indifference to the wants and happiness of their dependents, which is the besetting sin of this utilitarian age. There are, and have been, doubtless, many individual exceptions to this sweeping condemnation, and it is gratifying to know that, since the public attention has been more particularly directed to the existing evils, strenuous efforts have been commenced, and are now in actual progress, in many of the great towns of Lancashire and elsewhere, to obviate the causes of unhealthiness. With these prefatory remarks we proceed to lay before our readers an outline of the deeply interesting matter contained in the various documents now before us.

The most important of these publications are, of course, the Reports and Appendices of the Health of Towns Commission. These comprise three folio volumes or *blue books*; but, in addition to these, and in order to promote the diffusion of their contents among the public generally, an octavo edition has been published, and the reports of the several Commissioners have also been issued as separate pamphlets. The scope of this inquiry will be understood by the following enumeration of the subjects which the Commissioners were instructed to investigate:—

"The causes of disease among the inhabitants.

"The best means of promoting and securing the public health, under the operation of the laws and regulations now in force, and the usages at present prevailing with regard to—

"The drainage of lands;

"The erection, drainage, and ventilation of buildings;

"And the supply of water in such towns and districts, whether for purposes of health, or for the better protection of property from fire, and—

"How far the public health, and the condition of the poorer classes of the people of this realm, and the salubrity and safety of their dwellings may be promoted by the amendment of such laws, regulations, and usages."—*1st Report*, p. vii.

The Commissioners appear to have adopted the most judicious measures for carrying their instructions into operation. They selected for examination fifty towns, in which the rate of mortality appeared by the returns of the registers of death, with a few exceptions, to be the highest. These of course included the largest manufacturing towns and the principal ports, containing a population of more than three millions of persons. A series of questions was transmitted to the municipal and other officers, and subsequently each of these towns was visited by one of the Commissioners, who examined on the spot the general condition of the place, and received statements from medical and other officers, as well as from those among the inhabitants who were capable of affording information. It is satisfactory to find "that in these local inquiries a lively and cordial interest was taken by the inhabitants, and that the Commissioners obtained ready assistance from persons of every class and denomination." We are also happy to perceive that the members of our own profession have not been backward in giving their important aid; as we shall have occasion repeatedly to refer to the evidence, we will only here remark, that the most valuable part of the information collected by the Commission is derived from this source.

In an inquiry embracing such an extended field and such a variety of subjects, we shall select those divisions of it which are of primary importance, or which are more particularly interesting to the medical practitioner; and in doing this, the following order observed by the Commissioners will, for the most part, be followed:—

"1. Drainage, including house and main drainage, and the drainage of any space not covered with houses, yet influencing the health of the inhabitants.

"2. The paving of public streets, and courts and alleys.

"3. Cleansing; comprising the removal of all refuse matter not carried off by drainage, and the removal of nuisances.

"4. A supply of water for public purposes and private use.

"5. The construction and ventilation of buildings for promoting and securing the health of the inhabitants."—*Second Report*, p. 7.

1. *Drainage.*—The Commissioners state that, "among the evils, which appear to operate with the greatest severity on the condition of all, and especially of the labouring classes, are those arising from the absence of a proper attention to drainage; they prevail almost universally, to an extent altogether incompatable with the maintenance of the public health." And yet, upon this very subject, the public at large, and even many of those more particularly engaged in the matter, architects, surveyors, and builders, entertain the most narrow and mistaken views. As a sample of the ignorance and indifference which has prevailed upon this vital question, it may be stated, incredible as it will appear, that there was till very lately no other than surface drainage in two of the greatest thoroughfares in the metropolis, Bishopsgate Street and Cheapside.

When some of the wealthiest districts in London have thus been strangely neglected, it is not perhaps surprising that the poorer localities, though on account of their crowded population even more urgently requiring efficient sewerage, have been totally abandoned to filth and wretchedness.

The valuable evidence of Dr. Southwood Smith, places the evils resulting from the existing state of things, in a strong point of view. Speaking of what he calls *fever districts*, or those parts of the metropolis "in which fever is always so prevalent that the localities in question may be regarded as the ordinary seat of this disease," Dr. Smith observes, "in every district in which fever returns frequently, and prevails extensively, there is uniformly bad sewerage, a bad supply of water, a bad supply of scavengers, and a consequent accumulation of filth; and I have observed this to be so uniformly and generally the case, that I have been accustomed to express the fact in this way:—if you trace down the fever districts on a map, and then compare that map with the map of the Commissioners of Sewers, you will find that, wherever the Commissioners of Sewers have not been, there fever is prevalent; and, on the contrary, wherever they have been, there fever is comparatively absent."—*First Report*, p. 69.

Some details respecting the metropolitan sewers, although laughable from their very absurdity, strikingly illustrate the supineness of the authorities charged with the care of the public health. From the evidence of the Surveyor to the Commission of Sewers for the City, it appears that a certain sum per annum has been expended for the last ten years *in searching out forgotten and unknown sewers*, and among these "lost ones" appears to have been the main sewer in that retired part of London called Smithfield! After such cruel neglect we can hardly be surprised to hear, from the same authority, that one of the sewers "has been exceedingly ill-used, so much so, that in endeavouring to rout out all the sewers in order to make a plan, we found part of a bedstead in that sewer, and we have even found dead bodies, or at least coffins, in sewers: in one, which passed under a churchyard, we found that it had been used for sepulture, that they had broken into the sewer, and put bodies in it;" nay, by a species of retribution, "they had buried the beadle of the parish in the sewer."—(*L. c.*, p. 209.) It is probably to reward the diligent curators of the City, who are thus meritoriously engaged in redressing the wrongs of their neglected cloacæ, that we find, by the Bill laid before Parliament at the close of the late session, it is proposed, "that this Act shall extend and apply to the whole of England and Wales, *except the City of London and its liberties, and any place situate within a radius of five miles from Charing Cross, in the City of Westminster.*"

If from this graphic picture of the metropolitan sewerage, we turn to other great towns, the same defects are apparent. Many of the streets, courts, and alleys in Liverpool, Manchester, Birmingham, &c., are either entirely without drains, or, if these are provided, they are mere open gutters, adapted only to surface-drainage, and constantly exhaling noxious effluvia. A very intelligent witness largely engaged in building, Samuel Holme, Esq., of Liverpool, states, "there are thousands of houses and hundreds of courts in this town without a single drain of any description; and I never hail any thing with greater delight than I do a violent tempest, or a terrific thunder-storm, accompanied by heavy rain; for these are the only

scavengers that thousands have had to cleanse away the impurities and the filth in which they live, or rather, exist."—*L. c., Appendix*, p. 186.

In Manchester it appears that the Paving and Soughing Committee, owing to a want of funds, are only able to carry on their operations in 20 or 30 streets per annum, although there are more than 500 streets in a condition to be proceeded with, and requiring similar amelioration.

Great as are the injurious results of a total absence of sewers, it is a question whether more widely-spread evils do not spring from the manifold and almost universal defects of the sewerage, when it does exist; for, in the one case, the mischief is localised, whilst, in the latter, it operates upon a whole town and upon all its inhabitants. If experience did not show how slow is the progress of improvement, especially when opposed by private and powerful interests, it would have been difficult to comprehend that, in so many of the towns of England, and pre-eminently in the metropolis, there should exist, up to the present moment, a system of sewerage so utterly opposed in all its branches, not merely to scientific principles, but to the dictates of common sense.

We need hardly point out to the readers of this Journal, that, for effective drainage, the following are indispensable conditions:—1, That the whole of each natural geological area should be comprised in one plan, and, as a result of this, that all the drains and sewers and pavement within it, should be constructed with reference to each other, as well as to the whole area; 2, that there should be effective means for preventing noxious accumulations in the sewers; 3, that whatever poisonous gases may be disengaged, they should not be permitted to escape near the dwellings of the inhabitants.

Now the evidence shows that there is no city in the kingdom in which all these points are attained; so far from this indeed being the case, it is more usual to find them all neglected.

In describing the impediments existing in London to an efficient system, the Commissioners remark:—

"The drainage of two other districts to the north of the Thames is seriously interrupted by the want of the command over the natural outlets. The Holborn and Finsbury district, which extends over much land that is difficult of drainage, requiring every assistance that engineering science, unfettered by the interference of artificial boundaries, can afford, is cut off from the natural outlet, and is dependent for the means of discharging its waters upon three other districts, the city of London, the Westminster, and the Tower Hamlets divisions. The latter district is again prevented from obtaining the natural outfall by the intervention of the jurisdiction of the Commissioners for Poplar Marsh.

"The inconvenience as well as the enormous loss incurred by these defective arrangements is fully detailed in the evidence contained in the First Report. The sewers within the limits of the City having been laid in at levels, and of a capacity insufficient to convey away the sulliage brought down from the higher district, it became necessary to lower and enlarge those sewers, at an enormous expenditure. Large sums have also been expended in the Holborn and Finsbury district, to take advantage of this improvement. The existence of these evils may in a great degree be traced to the absence of a proper survey, such as we have previously recommended as a necessary preliminary for efficient drainage."—*Second Report*, p. 72.

We shall cease to wonder at any difficulties of this kind, when we find that the Metropolis is subdivided in a number of districts, having no

reference, with the exception of that south of the Thames, to the natural or geological areas; that, exclusively of the City jurisdiction and that of the Commissioners of Woods and Forests, who superintend the Regent's Park and Regent-street, there are no fewer than five different bodies of Commissioners of Sewers; and, lastly, that the paving and draining of the surface, with the exceptions just stated, are placed under the management of bodies distinct from those which superintend the underground drainage, and for which purpose London "is split up into no less than 84 different jurisdictions, for the government of which at least 129 Acts of Parliament have been passed within the present century."

In the provinces the evils of these conflicting powers are of course experienced in a more limited degree, though in many populous towns, as Liverpool, Manchester, Leeds, Nottingham, Norwich, &c., there are either authorities who thwart each other in their operations, or the jurisdiction is not co-extensive with the natural drainage. The mischiefs arising from this latter circumstance are well exemplified, among other places, at Leeds: "the river Aire, which would in its natural state have had a strong and regular current, had been dammed up in several places for mill-power, and for the purposes of an important water communication. These dams thus act as a series of catch-pits for the sewerage of a population of 120,000 persons. In this case, also, the authorities having control over the town drainage, even if they had been so constituted as to have been competent to execute or maintain systematic works, would have no jurisdiction or control over the natural outfalls; and, in consequence of this original want of jurisdiction and care, rights have apparently been acquired, which can now only be fairly redeemed, for the relief of the town, by purchase."—*Second Report*, p. 17.

With respect to the other conditions we have stated as being essential to a scientific system of drainage, it may be safely averred that, with a few isolated and imperfect exceptions, they are totally disregarded. The existing drains are so constructed as to favour rather than to prevent accumulation of refuse matter; they are, and especially the house-drains, much too large, and are also usually flat at the bottom, two circumstances which, combined with the defective supply of water, lead of necessity to deposits, and these undergoing decomposition, give off those poisonous exhalations, especially sulphuretted hydrogen, which constitute one of the many causes of the destructive diseases which ravage our towns and cities. What other than the most disastrous results can be anticipated when, as we learn from Mr. Roe, the intelligent surveyor of the Holborn and Finsbury district, that foul deposits are allowed to accumulate knee-deep, and remain for two years in a state of fermentation in the sewers beneath the streets; when private drains, opening into our very domiciles, become choked with filth; and when these tubular cess-pools, for such they become, unguarded by effective traps, vomit forth their deleterious gases into every street through the gratings, and into every house through the sinks? The inhabitants of London experience the inconvenience of this wretched system, for there is scarcely a house, even in the wealthiest districts, in which noisome smells are not perceived, especially in the basement story; whilst in the districts to the north of the Thames the stench becomes so offensive that it attracts attention as indicative of a change of weather,

whenever strong southerly winds prevail, at which times the air, driving into the sewers debouching in the river, cause a backward current and a consequent escape of gas.

These evils, familiar to all who reside in London, are thus described by Dr. Rigby: "I may mention one family, the members of which were constantly exposed to the effluvia and stench arising from bad drains; they never had a cook remain with them long without suffering severely in health; as the state of the drains became worse they all suffered, and at my urgent advice removed to a healthy suburb of London with the most marked effects in the improvement of health. These defects, as regard effluvia and stench arising from defective drainage, exist also among houses comparatively or quite new: for instance, in the Marylebone district, and even among some of the recently-built houses of Hyde Park."—*First Report*, p. 414.

We are desirous of calling particular attention to the important and interesting evidence of Mr. Dyce Guthrie, a gentleman who has paid great attention to the subject of drainage and the mode of improving it. He remarks, "as the *débris* from any tenement can only be carried off by the water which is furnished to it, the size of the tube to carry off that water after the soil is added to it, ought to bear a direct proportion to the supply of water. The soil-pipe of a water-closet is seldom more than two or three inches in diameter, and that pipe never becomes choked up, for the hydraulic pressure is so great that nothing impinging on the interior surface of the tube can resist its force; all matter is regularly washed off each time the tube is flushed, with even the small quantity of water contained in the basin of a common water-closet."—(*First Report*, p. 89.) This touches upon a point of infinite consequence, namely, the effectual cleansing of all sewers and drains, an object which, according to the best authorities, can only be accomplished by aqueous agency. It is well observed by a late writer on Geology, Professor Ansted, in alluding to the transporting power of water, that there are certain popular fallacies, concerning the motion of heavy bodies which tend to confuse the judgment: thus it is customary to consider weight as an absolute quality of certain bodies, which are therefore called heavy, though it is, in fact, as usually employed, only a relative term. "In this relative sense, a piece of wood is no more heavy when immersed in water, than a balloon filled with hydrogen gas is in the air;" for "in all cases, the actual weight of that quantity of the fluid which would have occupied the space filled by a solid body, must be deducted from the actual weight of the body before the relative weight—the only part which resists motion—can be calculated." It is also necessary to recollect that the power which water possesses of transporting heavy bodies, increases in an enormous ratio with the increased rapidity of the current. Professor Robison has stated, in his Treatise on Rivers, that "a velocity at the bottom of a stream

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| "Of 3 inches | in a second will | separate and lift up | particles of | fine clay. |
| 6 inches | ditto | ditto | | fine sand. |
| 8 inches | ditto | ditto | | coarse sand. |
| 12 inches | in a second will | sweep along and lift up | particles of | fine gravel. |
| 24 inches | ditto | ditto | gravel 1 inch | diameter. |
| and 36 inches | ditto | ditto | angular stone of the | size of an egg. |

"It appears from these experiments, therefore, that a velocity of six inches in a second would be sufficient for scouring away all the usual sediment, and that a velocity of one foot in a second would sweep away fine gravel."

The great merit of applying this transporting power of water to the cleansing of sewers is due to the Commissioners of the Holborn and Finsbury district, who, resting on some interesting experiments made by their intelligent surveyor, Mr. John Roe, have substituted what is called the "*flushing system*," for the old and defective plan of manual labour. This consists essentially in placing dams within the sewers, in certain situations, which collect "heads of water," and this being suddenly set free, carries away all the matter which has accumulated. The great advantages of this method are thus described by Mr. Roe:—

"The great principle intended to be carried out is, that instead of occasional cleansing, as formerly, the sewers should, when once cleansed, be kept free from deposit. The pecuniary saving is, I consider, the least advantage of this mode of cleansing; the great points attained are the avoidance of all accumulations of filth in the sewers, and the stirring up in removal, and consequent disagreeable effluvia, is also avoided; the streets and pavements are undisturbed; the men engaged in cleansing sewers have a more healthy employment than heretofore; private individuals are saved from the annoyance of their drains being choked: and as this plan of flushing affects the health and cleanliness of the inhabitants, the accomplishment of it, on a general and systematic principle, should be deemed of the utmost importance."—*First Report*, p. 134.

Although an ample supply of water is the prime essential in all efficient drainage, yet the form and the dimensions of the sewers are points of importance. The existing sewers, as we have stated, are for the most part flat at the bottom and upright at the sides, the very worst form to prevent deposits and to guard against the pressure of the surrounding earth. The egg-shape, as it is called, has been substituted in the Finsbury district, at Liverpool and other places, and this, by increasing the hydraulic pressure and so lessening the chance of deposits, is doubtless a great improvement. Mr. Dyce Guthrie has, however, suggested what appears to us, and we have conversed with some civil engineers and others qualified to judge upon the subject, a mode of drainage infinitely superior to any of the existing plans. It may be called, from the principle of its construction, *the tubular system of drainage*, the conduits being formed of tile tubes, like those used for field draining, only completely cylindrical. The tubes, which of course vary in size according to the service to be performed, are composed either of common clay or of terra cotta (fire clay;) it is further proposed that they should be glazed on the inside, which would secure the immense advantage of rendering the drain *impermeable*, and would thus prevent that leakage of liquid excreta, and that exhalation of poisonous gases which take place in all existing brick-built sewerage. This system would be in various ways very economical, both in original construction and subsequent maintenance; from the nature of the material, terra cotta being selected, it would be very durable, and with a due supply of water it would prevent all accumulation, in fact it would be self-cleansing.

Mr. Guthrie thus embodies the advantages of the tubular system:—

"Your opinion is, that as regards the original construction, for cheapness, for efficiency, and for keeping free from everything deleterious to health, the tubular

pipes supplied with water would be the cheapest and best?—Yes; a grand point would be gained by the adoption of tubular drains in the economy of water. Another advantage of my form of house drains would be, the saving of expense effected by the causing the drains of several houses to converge to a point opposite the centre house, at which point only would it be necessary to have an opening into the main sewer. The private drainage of a whole row might in the same manner converge to particular points, at which it would enter the main sewer; by this arrangement one flap or valve would suffice to prevent the escape into the houses of any emanations from the main sewers. The economy of large valves for entrances into the main sewers would of itself be important. I propose, however, a small valve to be placed where it may be thought most convenient on each house drain. Those valves and flaps at present in use are generally objectionable on the score of expense, which arises from their size being unnecessarily great; and their weight, being of metal, must be increased to suit the size, which causes imperfection in their operation. I approve of slate flaps, such as I have seen in the Holborn division of sewers; but I would propose well-burnt plates of common clay, fire clay, or terra cotta, which have the advantage of being readily moulded into the most efficient form. The advantages of flaps of these materials are, that, being of less weight than iron, they are more perfect in their action, and are lifted by a smaller run of water; that they are not affected by chemical action, and therefore are not decomposed, as iron is, by the gases and moisture by which they are surrounded, and that they are originally less expensive than iron, such as those now in use."—*First Report*, p. 93.

The rapidity of construction is another point of great advantage; it would only be necessary to cut a trench the width of the extreme diameter of the tubes, and these "might be placed *in situ* as rapidly as the necessary excavations were completed; you have nothing to do but to place them on the floor of the cut intended for their reception, a vast contrast from the common mode of brick-building, which is a tedious labour." Those of our readers who are well acquainted with the metropolis, can judge of the immense benefit and convenience which would result from any plan that would obviate the constant breaking up of the pavement for the cleansing, repairs and alterations of the sewers; at the time when we write, the two main thoroughfares of London—Holborn and Fleet-street, are both obstructed from these or some similar cause, a state of things which, under a scientific and combined system would be a rare event, instead of, what it literally has become of late years, almost a daily occurrence.

Before quitting this drainage question, we would briefly notice one other point—the imperative necessity of preventing the escape of the poisonous vapours which are so abundantly generated in all sewers as they are now managed. It is apparent that the main improvement would be the effectual cleansing by water; but there are two auxiliary means which will perhaps always, more or less, be required, and which at the present time are quite indispensable, namely, efficient traps and ventilation of sewers. The former contrivances have been alluded to; the latter object is one of difficulty, though it will doubtless be accomplished. One plan is to consume the noxious gases; if the sewers were properly flushed, the water would drive down the gaseous matters, and these might be caught in a receptacle placed at the mouth of the sewer and then burnt; this process has been objected to on the score of the expense. Mr. Guthrie thinks "the most effective mode of ventilating would be to have many small tubes from the crowns of the sewers; these might be laid towards either side of the street,

and be carried as high as the tops of house chimneys; the gases would thus be discharged high in the air, and the atmosphere required for respiration would not then be contaminated, as it is at present, by these ventilators which pour forth the gases from the sides or centres of the streets. No mode of ventilating can be more unscientific than the present boasted, though obnoxious system of grated openings in the streets. Tubes, however, might be attached to these, and carried high in all practical localities. Tubes of six or eight inches diameter would be sufficient, and the cost of many thousand yards of these would not equal the expense of a single large chimney-stalk."—*First Report*, p. 99.

II. *Paving.*—Closely connected with the sewerage of a city is the paving of the surface. Those only who are acquainted with the wretched courts, alleys and bye-streets of large towns, can form a just conception of the evils resulting from a want of pavement: the whole surface polluted with filth of every description; mud accumulated in all directions; and, after every shower, water lying in puddles, increasing that excessive moisture which prevails so extensively in the narrow streets and thoroughfares of towns. Even where the streets are paved, owing to a bad system, holes and irregularities exist, catching and retaining impurities of all kinds, and thus adding to the general discomfort.

These statements indicate the imperative necessity of a complete change in the system of drainage, sewerage, and pavement. At present, not only are vast evils inflicted on the health and comfort of the inhabitants, but enormous expenses are incurred, in the payment of officers unnecessarily multiplied, in the provision of premises for the meeting of the Commissioners (the purchase of one house in London for an office, with the cost of repairs, &c., amounted within a fraction to £10,000,) in law proceedings, and other less creditable items.

III. *Cleansing and the Removal of Nuisances.*—It is observed by Dr. Arnott, that "the immediate and chief cause of many of the diseases which impair the bodily and mental health of the people, and bring a considerable proportion prematurely to the grave, is the poison of *atmospheric impurity*, arising from the accumulation in and around their dwelling of the decomposing remnants of the substances used for food and in the arts, and of the impurities given out from their own bodies."—(*First Report*, p. 233.) The experience of all medical practitioners will confirm this statement; the contamination of the atmosphere noticed by Dr. Arnott, is in fact the most potential of all the deleterious agencies which are at work in large and crowded cities, for it is through the medium of the respiratory organs that the germs of typhoid, as well as of intermitting and remitting fevers, are introduced into the system. That a large part of this aërial deterioration arises from defective scavenging, and from the multitudinous nuisances of towns—open cess-pools, pig-sties, slaughter-houses, &c., is immediately apparent. Now the evidence shows that all these abominations prevail to an extent which is disgraceful to any highly civilised community. From the admirable report of Dr. L. Playfair, on the large towns in Lancashire, it appears that, in Liverpool, Manchester, Rochdale and Preston, the streets are cleaned once in a week; whilst, in

other places, Bolton, Wigan, &c., there are no regulations on this important subject.

But it is doubtful if even these rare visits of the scavengers are regularly paid, for Dr. Playfair remarks, "it was my decided impression, from examination of streets in the poorer districts of Liverpool, at intervals of several weeks, that the regulation of the committee as to their cleansing was either not acted up to, or was very inefficiently executed; and in confirmation of the opinion formed from the appearance of the streets, I quote the following passage from the Report by Dr. Duncan, who, himself a native of Liverpool, and intimately acquainted with its localities, has drawn the same conclusion. He says, 'I ought to have mentioned, among the evils requiring remedy in Liverpool, the inefficient system of scavenging and cleansing in the streets inhabited by the poorer classes. The visits of the scavengers to these localities are, I fear, like angels' visits in more respects than one, none of these streets being visited oftener than once a-week, and much longer intervals frequently intervening.—*Appendix. Part* 2, *to Second Report*, p. 12.

These statements refer, it must be recollected, to the paved streets, the rule being that the unpaved and unsewered streets, together with the courts and alleys swarming with inhabitants, and therefore, in an especial manner, requiring careful and repeated cleansing, do not receive any assistance from the public scavengers. The Commissioners observe on this subject:—

"As an illustration of the magnitude of this evil, we may state that in Liverpool there were in the year 1841, 2398 courts, containing 68,365 persons, besides streets, not under the public charge, of which we have no return before us. All these courts, and their numerous inhabitants, are considered to be excluded from the jurisdiction of the Scavenging Committee. Since that time the number of the courts has been increasing, and we regret that we cannot find in the Health of the Town Act, any provisions for placing these courts under the same regulations for cleansing, as the other parts of the town. An Act, passed a few days after that here alluded to (July 16, 1842,) extends the jurisdiction of the Scavenging Committee over courts, but from the replies received from the authorities, dated September, 1843, it appears that courts are still considered as private property, and cleansed, if at all, only by the occupiers. The same disinclination to exercise any jurisdiction over courts is found to prevail at Leeds. The power contained in the Improvement Act in that town for bringing the courts under the jurisdiction of the Town Council, appears to be of little avail, and such places are described to be 'as much neglected as ever.' Nor can we see on what principle of justice, the owners of these places are denied the advantage, which the regulated visits of the scavenger would afford them, since they have been rendered liable to the taxation, which may at any time be imposed for putting their property into good condition. The report, in reference to Birmingham, discloses a similar extent of evil. The courts in the parish of Birmingham, alone are above 2000 in number, and their inhabitants exceed 50,000, besides many in the adjoining parish of Ashton."—*Second Report*, p. 37.

London, as usual, forms no exception to the worst state of the worst district in the kingdom. It may be that some of the wretched streets and courts towards the west end are occasionally cleansed by the authorities; but we fear, from the experience of other parts, that the spring of action is rather an anxiety to protect the rich from infectious diseases than any care for the sad sufferings of the poor. Here is a picture the like of which

we have often ourselves seen, taken from the "East-end" of the English metropolis:—

"A short time ago I was standing in one of the streets branching off from Rosemary-lane, called Blue-anchor-yard, looking at a stream of abomination that was flowing down from a court into the open gutter in the centre of this Blue-anchor-yard, the open gutter being the common receptacle for the filth from the houses. This noisome stream was flowing close to a house, at the door of which there stood a woman with ruddy-cheeks neatly clothed. 'Five times this very day, Sir,' said she to me, 'have I swept this place as clean as I possibly could; but you see the state in which it is again. It is no use to try to keep it clean.' Her whole appearance indicated that she was a new comer; in a few days she would naturally give up her hopeless attempt to keep the place clean, and if she remain there she must necessarily sink into the state of squalor and filth, so general among her neighbours.—*Dr. Smith's First Report*, p. 74.

Some interesting details are given as to the comparative amount of debris furnished by the different kinds of pavement. It is stated by Mr. Thorn, a contractor, that the mud on a Macadamised road is three times as much as on ordinary pavement; whilst the accumulation on a wooden road is not more than one-third of that on pavement.

Mr. Whitworth, the inventor of the machine for cleansing streets, and which has been for some time used in a few districts in London, and generally in Manchester, gives some valuable evidence illustrative of the efficiency and economy of this contrivance. He states that at Manchester, he has made an agreement to sweep the streets twice as often as under the old system, and at an actual saving to the town of £500 per annum. Some idea of the efficiency of this plan, which is applicable to every kind of street surface, may be formed from the fact, that whilst a man can on the average sweep not more than 1000 or 1500 square yards daily, the machine worked by one horse sweeps in one hour 4000 square yards, or an average 16,000 to 24,000 per diem; the economy of labour on the whole is so great, that one machine will do the work of 36 men. Mr. Whitworth states that he is engaged in preparing a hand-sweeping machine for courts and alleys, an amelioration which, if properly carried out by the authorities, will be an unspeakable benefit.

Our limits will not allow us even to name the multitude of nuisances which contaminate the air of all large towns, and thus tend to disease. We would, however, call the attention of our readers for a moment to one of the worst evils of this class, the condition, namely, of privies and cesspools, which constitutes perhaps the greatest discomfort in the lot of the manufacturing poor. The Commissioners observe, with respect to the deficiency of these places, that—

"The extent to which this defect prevails in some of the larger towns is almost inconceivable. At Nottingham it is stated that, under the most favorable circumstances, houses under a rent of 10*l*. have only about one necessary to four or five houses, and frequently the inhabitants of eight or nine houses must resort to one place. In one part of Manchester the wants of upwards of 7000 inhabitants are supplied by 33 necessaries only; and in Ashton, Mr. Coulthart alludes to a locality where there are only two privies for 50 families. This want of privies is also described as being one of the marked characteristics of the town of Merthyr Tydvil, and in parts even of the Metropolis the deficiency is equally great."—*Second Report*, p. 61.

Not only does this disgraceful state of things lead to every kind of moral and physical debasement, but there is evidence to prove that the noxious exhalations from open cesspools situated close to the houses, are a cause of disease. These circumstances have induced the Commissioners to recommend that, in the case of all new houses, it be made compulsory on landlords to provide proper necessaries for the accommodation of the inmates. We trust, however, that in the progress of improvement cheap and effective water-closets will be generally substituted. It has been proved by a gentleman who has paid considerable attention to the subject, Mr. Austin, that a self-acting water-closet can be supplied and fixed complete for 50 shillings; and when we find that all which is required for draining houses, together with a constant and unlimited supply of water, can be secured for a weekly payment of 2¼d. per family, we may anticipate that the above or some similar contrivance, such as those described by Mr. Foden and Mr. Loudon, will be introduced even in the poorest tenements, especially when it is recollected that the expenses of cleansing and maintaining privies and the cost of a miserable supply of water, exceed the weekly estimate above quoted.

IV. *Supply of Water.*—All who are acquainted with the sanitary question are agreed, that without an ample and cheap supply of water, scarcely a single improvement can be effectually carried into operation: this supply is not only required to promote personal and domestic comfort, but likewise for cleansing sewers and the surface of streets and thoroughfares. We are happy to perceive that the Commissioners take a just view of the feelings of the poor on this important subject. They observe that—

"The general and great deficiency in the supplies of water, and the consequent state of filth which the abodes of the poorer classes so constantly exhibit, has, we fear, produced a very general impression, that they are not capable of appreciating the advantages and comfort either of personal or domestic cleanliness. The information derived from the investigations of the Commissioners, and the evidence obtained through other channels, has convinced us that this is a most erroneous view of the feelings and wants of those persons, and we are most desirous to correct this impression, which, if it were well founded, would form a barrier to any prospect of improvement, and would render nugatory the recommendations, that we may subsequently make for facilitating increased supplies of water."—*Second Report*, p. 46.

It is an unquestionable fact that the English are a people pre-eminently distinguished by their cleanly habits; but how is it possible that our humbler brethren can escape from the filth by which they are environed within and without, when the following is a sample of the supply of this prime necessary of life in the crowded parts of London and other great towns:—"the supply of water consists in this: that 16 houses are accommodated with one stand-pipe in the court (Snow's Rents, Westminster.) On the principal cleaning day, Sunday, the water is on for about five minutes, and it is on also for three days in the week for one half-hour, and so great is the rush to obtain a modicum, that perpetual quarrelling and disturbance is the result, and water-day is but another name for dissension." In some crowded districts of London it is stated the poor inhabitants were deprived of water altogether, because the owner of the

houses had some quarrel with the water company! A somewhat similar instance lately came to our knowledge of a small landlord, who locked up the only supply of water in a court, whenever any one of his tenants neglected to pay the rent, thus making the whole suffer for the fault or misfortune of one.

The engineer of the Southwark Water Company states, that no less than 5,000 tenements in that district, containing 30,000 persons, not being supplied by the Company, "depend for their supplies on pumps or such rain-water as they catch." In many of the manufacturing towns the supply is totally inadequate for their dense population; many of the habitations of the poor have never been properly scoured since they were erected; "many of the poor beg water, many steal it."

The evils of such a system are manifold, and amongst the rest it happens that, the supply being provided often only on alternate days, the water becomes bad and unfitted for use, especially in hot weather. Even when tanks and water-butts are substituted for stand-pipes, the case is not much improved, for these in poor districts are open to the air, and become loaded with dirt, soot, or other impurities, whilst it has been calculated that the expenses entailed on the tenants by these accompaniments of the intermittent system of supply actually amount to one-half of the whole capital invested by the Company; so that "if the Company's capital amount to £50,000, for engines, mains, &c., the tenant's capital invested for tanks, ball-cocks, and pipes, will involve an equal expenditure," the expense of the tank or butt being more than half the tenant's outlay.

Mr. Toynbee gives a painful account of the sufferings caused by this defective supply. This gentleman states—

"I have observed the same water, which is very filthy from having been used in washing some clothes, used again to wash others. They have told me, indeed, that they have done this to avoid the inconvenience of fetching water from a distance, and from the inability to carry the water up stairs when the rooms inhabited have been on the upper floor. My informants on this topic, it should be remembered, are patients, sickly people, weakened by sickness, and who cannot afford to pay for attendance. To the mothers who are debilitated, the carrying water up stairs is a very great exertion: mothers not daring to leave a child in the room, have to carry the child in one arm and the vessel of water with the other. I have had even sick children neglected and left dirty, and the excuse given has been the inability to fetch the water. Recently I have had a case of this kind. I have attended three children, two of them with scrofulous inflammations of the eyes, the other of them with a scrofulous affection of the throat; all of them rarely washed, and in an extremely filthy condition. The mother is a poor woman, who has been in a respectable condition, but she is now so far advanced in pregnancy as to be incapacitated from going up and down stairs to fetch water. She continually deplores her condition of having neither the strength to fetch a sufficient supply of water nor the means of paying for it being brought to her."—*First Report*, p. 340.

This is a picture of thousands of poor families, and which is familiar to every medical practitioner.

We regret that our limits will not allow us to lay before our readers more than a brief notice of the very valuable evidence of Mr. Hawksley, the able engineer of the Trent water-works at Nottingham, respecting the supply of that town by what is called the "high-pressure system;" to this

evidence, and that of Mr. Robert Thom, who has devised an efficient plan for the supply of Greenock and other towns, we would direct especial attention. The general features of Mr. Hawksley's method will be understood by a sketch of what he had proposed for the supply of the town of Newcastle-on-Tyne, or of a population of 40,000 or 50,000 people: it must be premised that, in this particular case, the water was to have been taken from a tidal river. A capacious reservoir was to be formed in the clay below the level of low water, into which the water was to be admitted in its best and purest state; "from this reservoir, after depositing the heavier particles, the water was to be raised by a steam-engine, alternately into one of two subsiding tanks, in which tank finer particles of matter held in suspension would be gradually deposited. From this subsiding tank the water would gradually flow upon one of two filter beds, after passing through the materials of which it would be elevated into a reservoir at the head of the town, by means of the same steam-engine by which it was raised into the subsiding tank, and by the same stroke by which other water was being raised into the other subsiding tank. The subsiding tanks, and the filter-beds were to be constructed in duplicate, that one pair might alternately be cleaned, whilst the other pair were in active operation."—*First Report*, p. 310.

At Nottingham, where this improved system has been applied with perfect success for several years, advantage was taken of the nature of the soil, clean sand and gravel, to form a natural filter by the side of the Trent, which at the same time acts as a reservoir, and through which the water slowly percolates for a distance of 150 feet; so perfect is the action that, although the stream is sometimes made so turbid by peat and other vegetable matters that it is of the colour of tea, yet the water after filtration is so bright that a pin may be seen at the depth of eight or nine feet.

Mr. Thom has erected at Greenock, Paisley, and Ayr, *self-cleaning filters*, of a very ingenious construction, and at an expense, for 50,000 inhabitants, of £800. He has also ascertained that "the moss-water, by flowing over or through a particular species of lava or trap-rock (amygdaloid,) became fine spring-water." What a contrast do these inventions, by which the water supplied to a whole town is purified by one operation, present when compared with the existing system, by which only the comparatively rich can afford to purchase a private filter, which, after all, but imperfectly accomplishes its object.

The greatest pressure at Nottingham is about 120 feet, the average being about 80 feet: this high pressure is kept upon all classes of pipes and at all times, so that the tenants' service pipes, being constantly full and in direct communication with the mains and chief reservoir, the use of tanks and water-buts is entirely discontinued. It is a point of the highest importance that this vast improvement is at once *economical to the inhabitants and remunerative to the Company:* thus it appears from Mr. Hawksley's evidence that, whilst formerly the labouring classes paid for a bucket of water containing three gallons delivered by carriers one farthing, the company supply 79 gallons for the same sum, or, in other words, "delivers water night and day, at every instant of time that it is wanted, at a charge 26 times less than the old delivery by hand." The weekly charge for a house of two or three stories, is about one penny.

The most beneficial results have been produced as to the habits and condition of the people by this unlimited supply introduced into the houses of the labouring-classes; "the increase of personal cleanliness was at first very marked, and was even obvious in the streets; and the medical men reported that the increase of cleanliness was very great in the houses, and that there was less disease."

The advantages of the high-pressure system are not confined to the domestic supply, great as these are; there are other and important benefits which follow in its train. Those who are practically acquainted with the subject, state that the most effectual preservative against fire is to have the mains kept constantly filled with water at high pressure. Mr. Braidwood, for example, the Director of the Fire Brigade in London, being consulted "as to the best mode of protecting the British Museum from fire, advised that that building should be surrounded with mains kept constantly filled with water at high pressure," a recommendation which has been put into operation. At Preston, the superintendent states that, for the last two years, they have never had a fire engine; the hose being screwed on the plug, the water can be thrown over the highest building, and is more effectual and rapid in its operation. There is no doubt that similar advantages would follow in all places where the plan was fully carried out. At Nottingham, several mills and factories are protected by three-inch pipes, which pass from the main up the stair-case with branches into each room, thus dispensing with the expense of tanks on the roof; an arrangement not only much more economical, but likewise more efficient, for tanks are liable to be soon exhausted, or in winter frozen, or they may get out of order, which was the case with much of the apparatus kept in the Tower, so that, when required at the late fire, it was found to be unavailable.

The use of water in a sanitary point of view ought also to include the supply of water-closets, the scouring of pavements, the cleansing of carriage-ways, and above all, the flushing of drains and sewers, applications which will doubtless in time become universal, as these matters are better understood.

V. *Construction and Ventilation of Streets, Courts, Houses, and Public Buildings.*—This, probably, is the subject to which the attention of medical men has been more particularly directed; at all events, it is that in which their co-operation is most desirable, and on which they are most likely to be consulted, both by individuals and by the municipal and other authorities; for these reasons, it appears desirable to explain the details of ventilation, so far as our limits will permit; we shall also, in this place, allude to some of the more general points of the sanitary question. The reports of Dr. Duncan on the physical causes of the high rate of mortality in Liverpool, of Mr. Holland on Chorlton-upon-Medlock a part of the borough of Manchester, of Mr. Roberton on the amount and causes of death in Manchester, of Dr. Laycock on the sanitary state of York, Dr. Shapter on the state of Exeter, of the Rev. J. Clay on the sanitary condition of Preston, Mr. Coulthart on that of Ashton, and especially the general report of Dr. Lyon Playfair on the large towns of Lancashire, are most valuable documents, containing a vast amount of statistical facts which

are deserving of the careful perusal of our professional brethren. The evidence of Dr. S. Smith, Dr. Arnott, Dr. Guy, Dr. Rigby, and Mr. Toynbee is equally important as regards the metropolis.

In considering the causes of the excessive mortality in large towns, it will become apparent that amongst the most influential are the crowded state of the population and the want of a free supply of fresh air.

The most densely populated spot of the empire is unquestionably, Liverpool, as we shall see by this Table:—

| Towns. | Inhabitants to Square Mile. | |
|---|---|---|
| | Total Area. | Builded Area. |
| Leeds . . . . . | 20,892 | 87,256 |
| Metropolis . . . . . | 27,423 | 50,000 |
| Birmingham . . . . . | 33,669 | 40,000 |
| Manchester (township) . . . | 83,224 | 100,000 |
| Liverpool (parish) . . . . . | 100,899 | 135,224 |

Mr. Farr had adduced a small portion of the East of London, containing a population in the ratio of 243,000 inhabitants to a square mile, as the greatest density attained in the heart of English cities; but, according to Dr. Duncan, there is actually a district in Liverpool "containing about 12,000 inhabitants crowded together on a surface of 105,000 square yards, which gives a ratio of 460,000 inhabitants to the geographical square mile; and if we confine the calculation to a smaller portion of this district, but still comprising a population of 8,000 (on 49,000 square yards.) we shall find the inhabitants packed together in the proportion of 657,963 to the square mile." In Nottingham, which is hemmed in by fields belonging to the freemen, it is stated by Mr. Hawksley that 4,200 people dwell in a square of 220 yards on the side (46,400 square yards,) and that the average area to each inhabitant throughout the town, including the streets, is about 18 square yards.

If from whole districts we proceed to inquire into the relative size of the courts and dwellings, the same results are obtained: thus, in a court at Liverpool, with an area of 150 square yards, there is a population of 118 inhabitants, or 1¼ square yard to each person; whilst, in those sinks of vice and misery, "lodging-houses," as many as 30 human beings are sometimes packed together in an underground cellar, containing at the utmost 2,100 cubic feet. To form some conception how far this horrible crowding tends to the production of disease, it may be as well to add, that the Inspectors of Prisons recommend not less than 1,000 cubic feet for every prisoner, as being essential to health and ventilation.

It is generally known that in many towns, principally however confined to Lancashire, though London, Leeds, and other places afford examples, a custom prevails of using cellars as habitations. Without seeing these places it is scarcely possible to conceive of the wretched character of the

great majority; they are, as Dr. Playfair terms them, "dismal abodes, badly lighted and worse ventilated." We learn from Dr. Duncan that these cellars are 10 or 12 feet square; that they are generally flagged, though frequently only having the bare earth for a floor; that 1771, or one-third, are from five to six feet deep; 2324 from four to five feet, and 1202 from three to four feet below the level of the streets; 5273, or more than five-sixths, have no windows to the front; and 2429, or about 44 per cent. are reported as being either damp or wet; and lastly, that 1617 have a back-cellar, used as a sleeping apartment, having no direct communication with the external atmosphere, and deriving its scanty supply of light and air solely from the front cellar. The actual condition of the worst of these horrible abodes is sad to contemplate. Mr. Holme, a leading builder at Liverpool, visited one where a poor woman, lately confined, was lying on straw in a vault, through the outer cellar, with a clay floor and he had to walk on bricks to reach the bed side, the floor itself being flooded with stagnant water. Dr. Playfair states that, in Clithero, "there is a range of cellars, in which the beds are raised on bricks, to keep them out of contact with the water, which, during the periods of much rain, often rises above a foot in depth."

The following is a statement of the number of these wretched abodes and of their population:—

| | Cellars. | Computed Population. |
|---|---|---|
| Liverpool .. .. .. .. | 7,892 | 39,460 |
| Manchester .. .. .. | 4,443 | 18,217 |
| Preston .. .. .. .. | 600 | 2,460 |
| Wigan .. .. .. .. | 95 | 276 |
| Bury .. .. .. .. .. | 150 | 615 |
| Rochdale .. .. .. .. | 457 | 1,747 |
| Bolton .. .. .. .. | 1,210 | 4,961 |

Thus there are in this county alone nearly 70,000 human beings living habitually in a condition more wretched than that of the brute creation. The only towns which possess at present any legal powers to deal with this vicious system are Liverpool, Leeds, and London.

It is almost unnecessary to inform medical practitioners that systematic and scientific ventilation is universally neglected both by rich and poor. Dr. Arnott observes: "The subject of ventilation has, as yet, been so little attended to, and is so little popularly understood, that even our Houses of Parliament, in which the intelligent and wealthy of the land assemble, were until lately seriously hurtful to those who had to be much in them from the great impurity of the air occasioned by the crowd. The same fault, unsuspected, exists to a considerable degree in many of our ordinary domestic arrangements; and in workshops and the dwellings of the labouring classes it is one of the greatest scourges of the people."—(*First Report*, p. 233.) Mr. Toynbee concludes, that defective ventilation is the principal cause of the scrofulous affections which abound amongst dispensary patients; and in the same sense Dr. Duncan quotes the authority of Sir James Clark, who regards "the respiration of a deteriorated atmosphere as one of the most powerful causes of tuberculous cachexia;" and he subsequently adds, "if an infant born in perfect health and of the

healthiest parents, be kept in close rooms in which free ventilation and cleanliness are neglected, a few months will often suffice to induce tuberculous cachexia." M. Baudelocque, in his treatise "*Etudes de la Maladie Scrofuleuse*," adopts the same view, and states that the only cause of scrofula which is met with isolated, or united to circumstances whose action is secondary, is the sojourn, more or less prolonged, in an atmosphere not sufficiently renovated.

There exists of course much diversity of opinion on this point, but no physiologist or practitioner doubts the immense importance of securing an ample supply of fresh air by means of an efficient ventilation. And yet at present, as we have seen, nothing is more neglected; dwelling-houses, especially of the poor, schools, manufactories, churches, work-rooms, all are in a state incompatible with health and comfort. There is no doubt that a large part of the existing evils is to be traced to the repeated failures, which have attended unscientific and blundering attempts at improvement; people have become tired of the trouble and expense which have been thus fruitlessly incurred. We entirely coincide, however, with the Commissioners, who thus express themselves:—"notwithstanding the apparent difficulties with which the ventilation of private dwellings is surrounded, a minute examination of the circumstances of the case has assured us that no field of improvement holds out a more promising result than that which may be anticipated in future from the more successful ventilation, even of the humblest dwellings." We shall return to this subject when considering the remedies suggested for this and the other prevailing defects.

In concluding this general notice of the causes inducing the prevailing unhealthiness of large towns, we are desirous of adding a few words on a point which has latterly attracted considerable attention, the influence, namely, of employments upon health. Dr Guy, who has investigated this question, especially in reference to the occurrence of phthisis, has obtained some interesting results. Thus, he finds, that sedentary occupations, especially in ill-ventilated apartments, have a greater tendency to produce consumption, than those which are pursued in the open air, and unprotected from the weather. This is shown by the following comparison:—

"Death from consumption under 30:—in-door, 37½ per cent.; tradesmen, 33 per cent.; out-door labourers, 25 per cent.; in-door and sedentary, 44 per cent.; in-door, using great exertion, 31½ per cent."

The proportion of cases in the three classes of gentry (including professional men,) tradesmen and artizans (including all classes of labouring men,) is respectively, 1 to 5, 1 to 2·60, and 1 to 2·29, or about 16, 18, and 30 respectively, in the hundred. Dr. Guy believes it to be a vulgar prejudice, that phthisis is more prevalent in England than in other countries. *First Report*, p. 343.

In a paper read by Mr. Neison before the Statistical Society in the present year and since published, the duration of life in various classes has been, among other matters, carefully considered, the data having been derived from the returns of Friendly Societies in England and Scotland. The general result of these inquiries is, that employment or occupation has even more influence upon health than locality. This view is supported by numerous tables, from which it appears "that, even in the same locality,

in the rural districts of the country, where all the supposed contaminating influences of ill-ventilated houses, narrow streets, bad sewerage, poisoned air, epidemic town fevers, and factory restraints, are absent, there is nevertheless, a very great superiority in the value of life in one class over another," the great advantage being in favour of agricultural labourers, whilst among painters, weavers, butchers, mill-wrights, bakers, bricklayers, tailors, shoemakers; &c., living in the same rural districts, the value of life is less favourable. The author subsequently observes—

"Some large towns or cities are known to represent a less value of life to their inhabitants generally than other towns; and the explanation usually given of this difference has been the favourable or unfavourable nature of the locality, and a change in the sanitary regulations of the place looked forward to as a certain remedy; but a minute examination of all the external circumstances affecting life will shew, that the great diversity in the mortality of certain classes arises from the influence of other agents. Thus, at the age 30, the difference between the expectation of life in the Rural Districts and in Liverpool is 8·2636 years; but the difference between Clerks and Labourers is 13·0211 years; and so also at other periods of life."—*Contributions to Vital Statistics*, p. 56.

The views of Mr. Neison will be sufficiently gathered from the following extracts:—

"If this position can be fairly established, it will follow as a direct consequence, that wherever an excess of unhealthy trades are congregated, there must also be an increased rate of mortality independent of the local influence; for if the same trades were placed in any other district, there would still be an increased rate of mortality simply in virtue of the trade or occupation.

"A very small portion of the population in either the Town or City Districts can follow agricultural pursuits; and therefore the standard of life in those Districts will be lowered in consequence of that circumstance alone; but on further examination it will be found that the comparative value of life in those districts is not only lowered in consequence of the absence of many of the most healthy occupations common to the Rural Districts, but that it is still further decreased by the presence of some of the most unhealthy employments, not to be found, or at least to a very limited extent, in the Rural Districts. In other words, the effect of the occupations is such, that if the same people were placed in the Rural Districts, no matter over how much surface they were spread, in order to avoid the influence supposed to connect itself with the congregation of large numbers into towns, still the mortality would be much higher among the people thus conditioned, than among the average of the rural population in ordinary circumstances."—*L. c.* p., 53, 54.

We have made this reference to the work of Mr. Neison, because it places in a prominent point of view, a fact which has always been recognised in a general way, namely, that the nature of the employment will influence the health of the individual who pursues it. But, in according to the author the merit he deserves for the very laborious inquiry he has undertaken, we must express our conviction, that he has entirely underrated the influence of the several causes of disease, which have been considered in the preceding pages; and further, we would observe that the worst results for the public health would arise, if these discouraging notions were adopted as the guide of future action. The limits of this article will not allow us to enter into the details requisite to combat the theory set forth in these contributions to vital statistics, and therefore we

must rest content with stating, that we do not perceive how it is possible to reconcile the extensive infantile mortality of cities, which cannot be caused by employment, with the principle advocated by Mr. Neison.

After having devoted so much space to the causes of the existing unhealthiness, we can only more briefly notice the results, and the remedies which have been suggested in the Bill lately presented to Parliament.

The general state of health in a town may be inferred from the mortuary tables, but, in order to apply this test, it is necessary to premise that the mean duration of life for the whole of England in 1841 was 41 years, and the mean age at death 29 years. The cause of the difference in the signification of these terms is not generally understood, and therefore it may be well to quote the following explanatory passage from the Fifth Annual Report (p. 39) of the Registrar-General of Births, Deaths, and Marriages:—"The duration of life in England is 41 years; if the population were *stationary*, the mean age of those who died would be 1 years, and 1 in 41 would die every year. The population has however increased 1·41 per cent. annually during the last 40 years; and we find that the mean age of the persons who died in the year 1841 instead of being 41 is 29 years; while 1 in 46 of the population died."

The following Tables, quoted by Dr. Duncan, give a general view of the relative mortality of London, and the great manufacturing towns:—

| Towns. | Population, 1841. | Deaths. |
|---|---|---|
| Metropolis. . . . . | 1,870,727 | 1 in 37·38 |
| Birmingham . . . . | 138,817 | „ 36·79 |
| Leeds . . . . . | 168,667 | „ 36·73 |
| Sheffield . . . . . | 85,293 | „ 32·92 |
| Bristol . . . . . | 64,298 | „ 32·38 |
| Manchester (Union) . | 192,408 | „ 29·64* |
| Liverpool (Parish) . . | 223,054 | „ 28·75* |

* "The rate of mortality in Liverpool and Manchester is deduced from the average of the five years, 1838—42."

| — | Total Deaths. (two years) 1839—41. | Deaths at 70, and upwards. | Number of Deaths to every 1000 Deaths. | |
|---|---|---|---|---|
| | | | Above 70. | Below 5. |
| Metropolis . . . . | 93,030 | 10,358 | 111 | 408 |
| Birmingham . . . | 7,426 | 654 | 88 | 482 |
| Leeds . . . . . | 8,701 | 688 | 79 | 480 |
| Manchester . . . . | 16,546 | 990 | 60 | 510 |
| Liverpool . . . . (Parliamentary) . . | 18,084 | 970 | 54 | 528 |

| | Average Age at Death. |
|---|---|
| "Metropolis, *i. e.* Kensington, Strand, Whitechapel, and Bethnal-Green Unions .. .. .. .. .. .. | 26½ years. |
| Leeds .. .. .. .. .. .. .. .. .. .. | 21 ,, |
| Manchester .. .. .. .. .. .. .. .. .. | 20 ,, |
| Bolton .. .. .. .. .. .. .. .. .. .. | 19 ,, |
| Liverpool .. .. .. .. .. .. .. .. .. | 17 ,, |

The Table below, compiled from Mr. Chadwick's admirable sanitary report, shows more in detail the influence of the causes of mortality in the several towns enumerated, and on the several ranks of life.

| Towns. | Average Age at Death. | | | General Average. |
|---|---|---|---|---|
| | Gentry and Professional Persons. | Tradesmen. | Labourers, &c. | |
| Kendal . . . . . | 45 years | 39 years | 34 years | 36 years |
| Bath . . . . . | 55 ,, | 37 ,, | 25 ,, | 31 ,, |
| Four Metropolitan Unions | 44 ,, | 28 ,, | 22 ,, | 25 ,, |
| Leeds . . . . . | 44 ,, | 27 ,, | 19 ,, | 21 ,, |
| Bolton . . . . . | 34 ,, | 23 ,, | 18 ,, | 19 ,, |
| Manchester . . . . | 38 ,, | 20 ,, | 17 ,, | 18 ,, |
| Liverpool . . . . . | 35 ,, | 22 ,, | 15 ,, | 17 ,, |

These documents disclose a fearful amount of mortality in populous districts, especially among those under the age of five years, at which epoch, in fact, more than half of those born are already cut off by death. With such ravages we can understand the observation of one of the medical witnesses, that in the townships of Manchester "the duration of infantile existence needs to be counted by hours or days rather than by months." It is, however, a remarkable and unexpected result of this excessive mortality that, so far from restraining the march of population, it directly and immediately leads to its increase, a circumstance which was first shown by Mr. Chadwick. Mr. Roberton of Manchester has especially illustrated this fact in the following statement, showing the relative proportion of births in healthy and unhealthy districts, and in the different classes of society.

"It appears that the proportion varies from 1 birth in 21·91 persons for the township of Hulme, occupied chiefly by the labouring class, to 1 in 36·48 for Broughton, inhabited generally by the middle and upper classes; and for the town of Manchester, as a whole, 1 in 25·19. With this may be compared the proportion for England, which is 1 in 31; for Wales, and for the metropolis, 1 in 34; for Devon and Hampshire, 1 in 36; and for Salop, which is 1 in 37: a comparison which shows the surpassing fecundity of this manufacturing community."—*Second Report, Appendix*, Part II., p. 107.

Upon this evidence Dr. Playfair remarks:—

"The connection between excessive births and excessive mortality is, by this time, sufficiently obvious; and careful investigation into facts has brought the

indisputable conclusion that disease and pestilence do not always check the increase of our species. Nay—singular and incredible as it may appear, these scourges are not merely powerless to restrain—but they actually give an impulse to—population! The facts exhibited in the preceding sections will, I apprehend, convincingly show that a crowded and unhealthy district, with all its inevitable accompaniments of low morals and low intelligence,—where the condition of human beings is scarcely above that of animals,—where appetite and instinct occupy the places of higher feelings,—where the barest means of support encourage the most improvident and early marriages,—is not the place where we shall find a diminishing, or even stationary population. For the early unions there are followed by early offspring; and although more than half that offspring may be swept away by disease during infancy, yet nearly a third of it will grow up, in spite of all the surrounding evils, to follow in the steps of their parents, and, in their turns, to continue a race, ignorant, miserable, and immoral as themselves."—*Second Report, Appendix*, Part II., p. 57.

Such are the results of the morbific agents at work in crowded communities as indicated by the ratio of mortality. There are, however, additional tests, among which the occurrence of fever is the most certain; for, although other and destructive forms of disease are induced by the malaria of cities, yet typhus may be regarded as a kind of measure of insalubrity, and especially of that which is susceptible of removal by sanitary improvement; the relative frequency of convulsions in infants is another typical index of insalubrity. Dr. Duncan, in noticing the several causes of disease we have been considering, says,—

"But if we are asked to point out more explicitly the *modus operandi* of these causes in increasing the mortality of Liverpool, we reply that they act partly by inducing a specific disease, and partly by deteriorating the general health of the inhabitants in such a way as to render them more prone to the attacks of nearly all diseases, but more particularly of the specific disease alluded to, and also of those organs which feel the first brunt of the poison, *i. e.*, the organs of respiration. The disease I refer to is fever,—the common fever of this country, which may be taken as a generic term, including the varieties known as typhus, synochus, low adynamic fever, brain fever, nervous fever, &c., and which I shall presently show to be the characteristic disease of the poor of Liverpool."—*L. c.*, p. 17.

This excellent observer subsequently remarks:—

"The causes I have mentioned are in operation, more or less, in almost every town, and if it be true that they are influential in the production or extension of fever, we should expect to find that disease more prevalent in towns generally than in the country, where the effluvial gases are more at liberty to follow the bent of their nature, and diffuse themselves through the circumambient atmosphere with velocities inversely proportioned to the square-roots of their densities. And this we find to be the case. Comparing the number of deaths from fever in two years, in the towns and in the country districts comprised in the first table, we find there were 10,930 in the former, and only 6,515 in the latter; the proportion being about 168 in the towns to 100 in the country districts, (which include, however, a number of towns of inferior magnitude.) Further, if it be true that these causes act with greater energy in Liverpool than elsewhere, their effect, or fever, ought also to appear in a greater ratio; and this, too, we find to be the case. Previously to the publication of the Reports of the Registrar-General, I stated my belief, founded chiefly on the records of dispensary practice, that 1 in 25 of the working population of Liverpool was annually

affected with fever, and that this probably afforded a higher ratio than any other town in England. This estimate is confirmed by the following table, showing the number of deaths from fever, in the five principal towns of England, during the whole period (3½ years) comprised in the Registrar-General's published reports.

| Towns. | Deaths by Fever.* | Total Deaths. | Per centage Proportion of Fever Deaths to others. | Proportion of Fever Deaths to Population Annually. |
|---|---|---|---|---|
| Birmingham .. .. .. .. | 502 | 12,224 | 4·10 | 1 in 917 |
| Leeds (Parliamentary Borough) | 661 | 14,747 | 4·48 | " 849 |
| Metropolis.. .. .. .. .. | 9,150 | 189,379 | 4·83 | " 690 |
| Manchester (three years) .. .. | 1,121 | 19,969 | 5·61 | " 498 |
| Liverpool and West Derby .. | 2,060 | 33,022 | 6·23 | " 488 |
| Liverpool (Parish) .. .. .. | 1,795† | 26,456 | 6·78 | " 407 |

* "Exclusive of scarlet fever and the exanthemata."

† "This gives 513 yearly for the parish alone; and as the mortality of fever in Liverpool is not more than 1 in 12 or 15 cases, 513 deaths will represent about 7000 cases of fever, which, multiplied by 25, will yield more than the estimated number of the working population."—*First Report, Appendix*, p. 19.

The evidence with respect to convulsions is equally significant, the ratio in five of the largest towns in England, being precisely in proportion to the standard of unhealthiness: thus, on an average of the three years, 1838-39-40, the proportion of deaths by convulsions and teething to the total deaths from all diseases was, in Birmingham 5·72 per cent., in London 7·29, in Leeds 12·24, in Manchester 13·69, and in Liverpool 14·93. There can be no doubt that the high state of irritability of the nervous centres indicated by this statement, is essentially caused by the deleterious character of the atmosphere, which attains its utmost intensity among the densely crowded alleys and cellars of Leeds, Manchester, and Liverpool.

If, from these general indications of unhealthiness, we pass to those more special tests which individualise the causes of disease, the statistical evidence is equally demonstrative. The most searching and discriminative investigation in this point of view is, that of Mr. Holland, who has given a most detailed and interesting account of that part of Manchester called Chorlton-upon-Medlock. In his inquiry, Mr. Holland has separately considered the different classes of streets and houses as to their relative mortality; he has also shown the beneficial results which have followed sanitary improvements, such as the introduction of drainage, pavement, and so forth. "This analysis shows a very striking difference in the average rate of mortality among the inhabitants of the different streets; for instance, it has been 1·9 per cent. per annum among the inhabitants of the first-class streets and first-class houses, and 4 per cent. in the third or worst-class streets and third class houses."—(*First Report, Appendix*, p. 63.) A part of this difference of course depends on general

causes, poverty, excessive labour, and vicious indulgences; but an extended inquiry still proves that a low rate of mortality has constantly accompanied a good condition of streets and dwellings, and a high rate of mortality the contrary condition.

Dr. Playfair has given a special illustration of this law in the town of Wigan, where it was ascertained that persons following the same occupation in an unhealthy and a healthy district were subject to very different ratios of mortality; that, for example, the tradesman in the former died $4\frac{1}{2}$ years before the tradesman in the latter, whilst in the case of the artisan the difference amounted to $6\frac{3}{4}$ years.

The same results have been observed in all other towns, there being a vast difference in the mortality of the better built parts and those which are over-populated, unsewered, and ill-ventilated: thus the rate of mortality is actually found to be nearly double in some of the neglected districts in the east, compared with what it is in the western part of London.

As it is our object to present a picture of the physical rather than of the moral evils connected with the state of large towns, we shall not enter into any detailed illustration of this latter branch of the inquiry, which indeed to medical men would be superfluous. That a high tone of moral feeling should be sustained in the midst of the squalid misery and material debasement we have described, is a thing all but impossible, and the general tenour of the evidence of the medical and other witnesses confirms this inference. Dr. S. Smith states, with regard to the labouring poor in cities, that as they have not the bodily vigour and the industrious habits of a healthy and independent peasantry, so they have not the intelligence and spirit proper to such a race; "one of the most melancholy proofs of this is the quiet and unresisting manner in which they succumb to the wretchedness of their lot." The reports from Lancashire, where this evil system has attained its acmé, furnish painful proof of the extent to which this moral sickness has infected the town-population. In many of the populous places, in that heart of our manufacturing system, with the ravages of death, and especially with the frightful infantile mortality, there has grown up a class of institutions unknown as to their peculiar features amongst ordinary communities of men, and which are in a marked manner characteristic of those "cities of the plague:" we allude to burial-clubs. In the agricultural districts, it is true, there are sick and benefit clubs, in which allowances are often made on the death of members to defray the funeral expenses; but this is a subordinate, and, as it were, an incidental appendage of those admirable institutions. What, however, is the system as it is at work in Preston? "Most of the sick-clubs," as the Rev. J. Clay states in his excellent report, "are also burial-clubs; that is, a certain sum, varying from £2 to £10, is allowed on the death of a member. There are also in Preston seven societies acting only as burial-clubs, but acting as such very extensively. From the reports sent in, it appears that the present members belonging to three of these societies are upwards of 23,400! (the whole population in 1841 was 50,131); and that the aggregate sum expended by them in funerals, or rather paid to claimants, amounts to £2,460 yearly." The worst feature of the case is, that, according to one of the reports, 64 *per cent. of the members who die are under five years of age.*—*1st Rep. Ap.* p. 48.

The evidence further shows that this excessive mortality is made the cloak for pecuniary investments of a somewhat novel character, even in this speculative age. Instances are related in which hired nurses have speculated on the lives of infants committed to their care, by entering them in clubs. Thus, the collector of one of these burial-clubs states, "within these last few days, two young women proposed to him to enter a child into the society, offering to pay the weekly premium alternately; on inquiry he found that the child's mother was dead, and that the infant itself was placed at nurse with the mother of one of these young women." The darkest part of these transactions still remains to be told, for there is good reason to believe that advantage is in some cases taken of another abominable custom, namely, the drugging infants with opium, actually to poison these hapless members for the sake of the funeral allowance; and, as the same person may be entered into several societies, the insurer may receive as much as £16 6s. 6d., a sum sufficiently large to tempt to the commission of the most heinous crimes, murder itself forming no exception. A case related by Mr. Clay shows that this detestable system invades even that last shrine of human affection, a mother's heart; a lady stated to Mr. Clay, "that a young woman, whose services she required as a wet-nurse, having a child ill, she offered to send her own medical friend to attend it; the reply of the nurse was,—'Oh, never mind, ma'am, it's in two burial clubs.'"

After such sickening details, it will appear almost an indifferent matter, that the pecuniary penalties inflicted on the community by the excessive mortality and sickness now prevailing, and removable by sanitary measures, are enormous. Our limits will not allow us to enter upon the proof of this position, and we can therefore only state that, according to Dr. Playfair, in the one county of Lancashire alone £5,000,000 per annum are sacrificed in consequence of the attacks of preventible disease! It is also desirable to state, that the greater number of the ameliorations so urgently demanded would in themselves be actually economical. Thus it has been calculated, by one of the most experienced engineers, that an improved and unlimited supply of water may be provided at one-sixth part of the cost of the existing and defective system. Such a supply would further tend to an immense saving in the loss by fire, for it has been ascertained in some of the great cities in the United States, that the cost of insurance has actually been reduced 25 per cent. in consequence of a high pressure being kept up in the mains. By a judicious application of that refuse matter, which in other great towns, after contaminating the air is recklessly wasted, land around Edinburgh has been made to return an annual rent of £30, £40, and even £50 an acre; whilst, in the vicinity of Milan, meadows irrigated by the sewerage water of that city, which in London is allowed to flow into the Thames, are rendered so fertile that they are mowed in November, January, March and April for stable feeding; in June, July, and August, they yield three crops of hay, and again in September they furnish an abundant pasture for cattle.

We cannot better enter upon the consideration of the remedies devised by the Government for the removal of the widely-spread evils we have described, than by quoting the following judicious observations of Dr. Playfair, who, in concluding his excellent report, remarks:—

"That all the facts elicited during the inquiry tend to show that excessive mortality is due to adventitious causes, in almost every instance removable by the combined action of physical improvements, and by the extension of education. Humanity calls loudly for the interference of a paternal legislature to remedy the evils widely spread and deeply rooted—but not irremovable. Sound political economy cannot be in any way opposed to true humanity; and I would say, that all the principles which conduce to the good order and prosperity of the state are involved in the improvement of the sanitary condition of the population." —*L. c.*, p. 73.

The full and impartial consideration of the whole subject has forced on our minds a conviction in which we feel assured the public, when sufficiently informed, will entirely participate, that it is vain to expect any general and enduring amelioration without a total change in the whole of the existing system—commissioners of sewers, commissioners of paving, inspectors of nuisances, and other officials as now constituted, must be swept away before any uniform and efficient action can be insured. This indispensable initiative measure, we are happy to find, is provided for by the Bill introduced into the House of Commons at the close of the last Session, "for the improvement of the Sewerage and Drainage of Towns and Populous Districts, and for making provision for an ample supply of water, &c." The hundredth clause of this important Bill is to the following effect:—

"And be it Enacted, That if there shall be, within any town or district made subject to this Act by an Order in Council as aforesaid, any body or bodies of Trustees appointed by or acting under or by virtue of any local Act or Acts of Parliament for the purpose of paving, cleansing, sewering, draining or supplying with water such town or district, or any part thereof, or for any or either of the purposes aforesaid, then on the day to be mentioned in every such Order in Council respectively as the day on which this Act shall come into full force and operation within such town or district, all and every the powers, authorities, and duties, of what nature or kind soever, of such Trustees, and of every officer or other person acting under their authority, shall wholly cease and determine."

As a consequence of this provision, the powers and property of every kind possessed by such trustees are to be transferred to the new bodies which are to be appointed for carrying the provisions of the proposed Act into execution.

The Act, as we have already observed, is "to extend to and apply to the whole of England and Wales, except the City of London and its Liberties, and any place situate within a radius of five miles from Charing Cross, in the City of Westminster." It is difficult to conceive upon what principle this exception is made. We have shown that all the evils of the system are as rife in the metropolis as in the provinces; the Commissioners have strongly condemned the multiplication of boards and officers; they have shown the impracticability of carrying out general and enlarged plans of improvements with such conflicting authorities; and they have even found it necessary to make a special report on the drainage and supply of water in London, which they conclude by stating that, "Further legislative enactments are required to improve the laws relating to sewers and the construction of drains to existing houses, to combine the duties of the underground with the surface drainage, to improve the cleansing of small

streets, courts, and alleys, and to ensure a more liberal and better distributed supply of water."—*Second Report*, p. 75.

As Lord Lincoln, on introducing this Bill had no opportunity of explaining the general views of the Government, it would be premature to pronounce a decided opinion on the subject; but it is certain that no measure which excludes the vast population of London and its suburbs, consisting of more than 2,000,000 *of persons*, from the inestimable advantages derivable from an improved and scientific system, can secure the public approval.

Although there are this and other serious defects in the Sanitary Bill, yet on the whole we are bound to express the highest opinion of its enactments; it is in fact a sweeping measure of reform, and in such a direction that men of all parties must concur in thanking the Government for the searching inquiry they have instituted, and for the admirable plan they have devised for rectifying the enormous evils and abuses brought to light.

We proceed to lay before our readers the most important provisions of the proposed measure.

All the powers for draining, paving and cleansing towns, for supplying water, removing nuisances, promoting ventilation, &c., are to be vested in each town in one body, consisting of "Commissioners," who are to be nominated in every town as follows: a certain number are to be elected by the occupiers and owners of houses of the rateable value of £10, and upwards, the right of voting being cumulative according to the amount of the property and rental; some are to be elected by the town council, where it exists, out of the aldermen and councillors; a proportion are to be selected by the magistrates who act in borough and other towns, out of their own numbers; and lastly, some are to be elected by the trustees of local Acts. The Commissioners, one third of whom are to go out of office every third year, will thus represent the various interests concerned in their proceedings; and although we think the term of office should have been more curtailed, and especially that tenants paying a certain amount of rent should have been made eligible for election as Commissioners, the body constituted as above, promises to be a vast improvement on the existing boards, many of which, especially in London, are essentially self-nominated.

A sufficient number of inspectors "for the purpose of superintending and otherwise assisting in carrying this Act into execution," are to be appointed by one of the Secretaries of State.

One of the best provisions of the Bill is, that which relates to the appointment of "medical officers of health." As it is desirable that our professional brethren, and especially those residing in populous towns and districts, should be acquainted with the nature of these appointments, we append the whole of the two clauses (No. 175 and 176) concerning them.

"175. And whereas the health of the population, especially of the poorer classes, is frequently injured by the prevalence of epidemical and other disorders, and the virulence and extent of such disorders is frequently due and owing to the existence of local causes which are capable of removal, but which have hitherto frequently escaped detection from the want of some experienced person to examine into and report upon them, it is expedient that power should be given

to appoint a duly qualified medical practitioner for that purpose; Be it therefore enacted, That it shall be lawful for the said Commissioners to appoint, subject to the approval of One of Her Majesty's Principal Secretaries of State, a legally-qualified medical practitioner, of skill and experience, to inspect and report periodically on the sanitary condition of any town or district, to ascertain the existence of diseases, more especially epidemics increasing the rates of mortality, and to point out the existence of any nuisances or other local causes which are likely to originate and maintain such diseases and injuriously affect the health of the inhabitants of such town or district, and to take cognizance of the fact of the existence of any contagious disease, and to point out the most efficacious modes for checking, or preventing the spread of such diseases, and also to point out the most efficient means for the ventilation of churches, chapels, schools, registered lodging-houses, and other public edifices within the said town or district, and to perform any other duties of a like nature which may be required of him; and such person shall be called the Medical Officer of Health for the town or district for which he shall be appointed; and it shall be lawful for the said Commissioners to pay to such officer such salary as shall be approved of by One of Her Majesty's Principal Secretaries of State.

"176. And be it Enacted, That whenever it shall be lawful for any Coroner to summon medical witnesses, and to direct the performance of a post-mortem examination, under the provisions of an Act passed in the Session of Parliament held in the sixth and seventh years of the reign of his late Majesty King William the Fourth, intituled, 'An Act to provide for the Attendance and Remuneration of Medical Witnesses at Coroners' Inquests,' it shall be lawful for such Coroner to issue his order for the attendance of the medical officer of health for the town or district within which any such inquest shall be held, and to direct the performance by such medical officer of a post-mortem examination, with or without analysis of the contents of the stomach or intestines, without fee or reward; and any provisions contained in the said Act for imposing any penalty on any medical practitioner, for any disobedience of any order of such Coroner, shall be taken to extend and apply to such officer of health."

Lastly, the Commissioners are to appoint persons to superintend the due execution of all duties to be performed by the scavengers; to enter in a book all complaints made by any inhabitant of any deficiency in the supply of water, and of any infringement of the provisions of the Act, or of the regulations made by the Commissioners respecting cleanliness and the suppression of nuisances; to visit and examine into the state of slaughter-houses; and to inspect all cattle, fish, &c., intended for food, so as to ascertain if it be unsound or unwholesome: each of such officers is to be called "the Inspector of Nuisances."

Such, then, is the *personnel* of the Government measure for sanitary improvement. The powers intrusted to the Inspectors and Commissioners are very comprehensive and stringent. In order to secure that essential point in sewerage, uniformity, the Commissioners are to cause a map of the district within their jurisdiction to be provided, on which all that relates to sewers, drains, water-pipes, gas-pipes, &c., is to be marked; the various inequalities of the surface are also to be indicated, and what are called *contour lines*, or lines of equal altitude, are to be inserted. Such a map would be of great service to all parties interested in building and drainage, and in itself must lead to a more scientific mode of procedure.

Authority is given to pave, flag, and put into good order all streets; no new streets are to be made, without the levels having been previously fixed by the surveyor of the Commissioners; all new streets are to be of a

certain width, which, for carriage-roads it is proposed shall not be less than 30 feet, and for foot-ways not less than 20 feet. We do not find that any provision is made for regulating the width and size of courts and alleys; and yet if this point is not to be secured, it will be apparent, to all who are familiar with the state of large towns, that one of the ameliorations most urgently demanded, will have been omitted.

The part of the Bill relating to sewerage and drainage contains many excellent provisions. The Commissioners are to cause every town subject to the Act, "to be well and effectually sewered and drained," not merely as relates to the public thoroughfares, as at present, but to every house and building within the district. For these purposes power is given to construct sewers where none exist; to provide for properly flushing and cleansing them out; to obviate the injurious effects arising from the noxious exhalations escaping at gulley-holes, by providing proper traps, and by the ventilation of sewers, "or by such other ways and means as shall be practicable for that purpose;" to require the owners of all houses, which shall be found not to be properly drained, to construct a covered drain of such materials, size and disposition with respect to fall, as shall be adequate for the drainage of every house, together with its areas, water-closets, privies and offices. Authority is further given to purchase and remove all weirs and mill-dams, causing obstructions to drainage; to compel owners of houses to keep the privies and cess-pools attached to them in good and proper order, according to the regulations of the Commissioners; and further to require the owner of any house to which no sufficient privy or ash-pit is attached, to provide the same in such a manner as shall be requisite for the use of the inmates and occupiers.

By the 167th clause, it is required that all refuse matter, manure, ashes, &c., be removed within a limited period; and, moreover, it is provided, "that if at any time a certificate, signed by the medical officer of health hereinafter authorized to be appointed, or by any *Two* legally qualified medical practitioners, shall be presented to the said Commissioners, certifying that any accumulation of dung, soil, or filth, within the limits of the said town or district, ought to be removed, as being to the prejudice of the health of the inhabitants, the Clerk to the said Commissioners shall forthwith give notice to the owner or reputed owner of such dung, soil or filth, to remove the same within *Twenty-four* hours after such notice." Stagnant pools of water and other annoyances are likewise to be removed.

Ample powers are given for securing to all towns an abundant supply of good water, both for domestic purposes, including baths, the cleansing of house-drains, privies, and water-closets, and "for the efficient and wholesome cleansing of the streets, and the main and other sewers and drains." With this view the Commissioners may purchase or lease the works of existing water-companies; they may also purchase streams of water, construct water-works, lay down pipes, &c.; and, which is a most beneficial provision, they may "erect and place any number of new cisterns, pumps, conduits, or other water-works for the supply of water to the inhabitants of any street, court or alley, or of any number of houses, as they shall see fit, or to erect the same in any public situation, for the gratuitous use of any persons who may choose to carry the same away for their own private use, but not for sale, and to supply with water any pub-

lic baths or washhouses that may be established for the use of the poorer classes."

In the case of houses, the rent of which does not exceed £10, the Commissioners are empowered to lay down the necessary pipes, and to provide a cistern, &c., for the supply of water. This is another of the excellent features of the proposed Act, but it is clogged with certain conditions, which we trust will be hereafter expunged; we refer to the introduction of this immense improvement being made contingent on the sanction of the owner being first obtained. It is notorious that the persons who own these humble and often miserable tenements, are, as a class, uneducated and frequently impoverished and selfish individuals, who, from these or other causes, are not only indifferent to the wants and comforts of their tenants, but who are even often opposed to all improvement. To leave to such men the power of deciding whether one of the most essential of the sanitary measures shall or shall not be made available in our crowded towns, would not only be in itself a perfect absurdity, but would also, in a multitude of cases, inflict a cruel hardship on our suffering fellow-countrymen.

The Bill contains a clause (No. 189) by which the larger portion of the evils connected with the use of cellars as dwellings will be obviated; for it is therein enacted, that, so soon as the Act comes into operation, "it shall not be lawful to let separately to hire as a dwelling, nor to occupy or suffer to be occupied as such, any room or cellar, of which the surface of the floor is more than three feet below the surface of the footway of the nearest street;" there are certain exceptions made to this provision which detract from its value, but it will still be the means of closing a large number of these places.

In order to facilitate the introduction of these various improvements, and, by dividing the expenses incurred, to prevent unfair pecuniary demands being made, in cases where any street, not being a highway repairable by the inhabitants at large, shall have been paved and drained, and when the owner is only tenant for life, or in cases where the amount of the sum to be repaid shall be more than half the amount of the net annual value of the premises, the Commissioners are authorized to allow time for the re-payment of the money expended by instalments of not less than one-twentieth part of the whole sum originally due, interest of course being charged on the part remaining unpaid.

In the preceding remarks and extracts we have summarily noticed all the leading improvements provided for in the proposed Act: there are many other and minor points on which our space will not allow us to comment, but which will be readily understood by the following extract:—

"184. And be it Enacted, That it shall be lawful for the said Commissioners, and they are hereby required from time to time to make bye-laws as they shall think fit, for all or any of the purposes following; (that is to say,)

For preventing nuisances and annoyances in any streets, or near thereto, and effecting cleanliness therein:

For making regulations for registering and inspection of slaughter-houses and knackers' yards, and for keeping the same in a cleanly and proper state, and for removing filth therefrom at least *Once* in every *Twenty-four* Hours, and for requiring that they shall be provided with a sufficient supply of water:

For regulating the manner of keeping swine, and preventing the keeping thereof within any dwelling-house, and for describing the limits in such town or district within which it shall be lawful to keep the same:

For the punishment of persons selling unwholesome meat, and for seizing and condemning the same:

For regulating the duties of scavengers, and for regulating the management of public privies:

For making regulations for the registering of lodging-houses, and for maintaining cleanliness therein, and keeping them in a wholesome condition:

For laying down rules for cleansing filthy and unwholesome dwellings."

All the provisions contained in the Act and the duties of the Commissioners, Inspectors, Officers of Health and subordinate employés, are to be enforced by efficient control and penalties, the whole being under the direction of the Secretary of State.

Before dismissing the remedial part of the question, we are desirous of calling attention to the various improvements which have been applied and suggested for promoting one of the most important of the ameliorations demanded, and which to the medical observer is of peculiar interest, the ventilation, namely, of dwelling-houses, public institutions, and all places where persons are congregated together. The works of Dr. Reid, and especially the writings and statements of Dr. Arnott, have made this subject familiar to most professional men. The great objects to be attained are the removal of the vitiated atmosphere, and the maintenance of a medium temperature, without causing draughts, or cold currents of air. Simple as these objects may appear to be, they are, as we have previously noticed, difficult of attainment, and moreover most of the plans, especially when applied on a large scale, are so expensive as to be on that score impracticable.

We may first notice what we deem to be the most urgent case, the ventilation of the small and close dwellings of the poor. For this purpose the balanced valve chimney ventilator, invented by Dr. Arnott, which allows the vitiated air to pass into the chimney, but prevents the return of smoke, may often be applied with great advantage; it is cheap, costing only a few shillings, is most simple in its operation, not liable to derangement, and requires little or no care; indeed it is so efficient, that we feel assured its universal introduction into every sitting-room, drawing-room, and sleeping apartment in the kingdom, whether of rich or poor, would be an incalculable benefit. There are, however, some difficulties opposed to the effective action of this contrivance, the principal of which arises from the defective construction of chimneys, which are, and especially in humble tenements, much too large, and thus prevent the necessary draught. A fire is also requisite to produce a full effect, but this is usually provided, even in Summer, among the poor for domestic purposes. Mr. Toynbee has also extensively applied a ventilating window-pane, which in its simplest form is very cheap, the whole expense being two shillings, and likewise most beneficial in its action. This gentleman, whose extensive experience on the subject entitles his opinion to attention, has no doubt that cheap and effective ventilation might be provided for in every poor man's dwelling, and that it could be enforced in the case of all new buildings, school-rooms, and so forth, without injury; it is therefore much to

be regretted, that no express provision is made to secure so desirable an object in the Government measure.

Dr. Arnott has devised a simple and effective plan for ventilating rooms where many persons are collected together, and which might be applied advantageously in a vast number of instances. It is as follows; the skirting board should be removed from the wall so as to form a space for the admission of fresh air; the space thus obtained, is closed in at the top by finely perforated zinc, and communicates with the external atmosphere by an opening, which being provided with a valve, regulates the quantity of air to be admitted. The most efficient means for supplying fresh air to large masses of people is, however, the *air-pump*, also contrived by this distinguished and philanthropic member of our profession. The first notion of this apparatus appears to have been derived from the celebrated Dr. Stephen Hales, who proposed a large bellows for the purpose, but which was constructed on such erroneous principles that the value of the invention was greatly diminished. The air-pump of Dr. Arnott drives into the room or place to be ventilated any required quantity of air with a very slight expenditure of power, and it is thus admirably adapted for work-rooms, manufactories, schools, churches, ships, &c.

The evidence of Dr. Rigby, physician to the general Lying-in Hospital, is so valuable, that we are anxious to direct special attention to the subject to which it relates. Dr. Rigby states that, formerly—

"The hospital was seldom free for any length of time from puerperal fever, occasionally producing frightful ravages, and requiring the building every now and then to be closed. After the greatest attention had been paid to cleanliness in every respect, the wards left open night and day for weeks, fumigated, the walls limed and painted, the beds thoroughly cleaned, fumigated, repaired, and frequently renewed, and the most scrupulous attention paid to cleanliness, the fever re-appeared, on some occasions *immediately*, on the hospital being re-opened. This circumstance made us look to external causes, when we ascertained that in the immediate vicinity of the hospital there were upwards of 1500 feet of open ditches, receiving the drainage of the poor and dense population of the neighbourhood, one of the ditches being not more than 30 feet from the walls of the building. It was black and stagnant, and in constant ebullition from the disengagement of gas."—*First Report*, p. 412.

As puerperal fever still continued from time to time, atte tion was paid to the means of ventilation, with which the physicians w re dissatisfied, and with reason, for "the air of the wards was always cl se, oppressive, and bed-roomy." The hospital was ventilated according to Dr. Reid's plan, and the consequence was, that "the air in the wards became not merely free from effluvia, but has now a remarkably clean, clear, refreshing feel, which I can only compare to the sensation produced on entering an empty room which has been recently whitewashed."—(*L. c.*, p. 413.) The most beneficial results followed these improvements; from the moment when the full effects of efficient drainage and ventilation were secured, not a single case of puerperal fever had occurred; "patients have been admitted broken down by poverty and misery; severe and dangerous labours have occurred among them, and there has been every variety of weather, but up to the present time (April 1844) since July there has not occurred the slightest trace of puerperal fever."—*L. c.*

As many of our readers are interested in the ventilation of prisons and

jails we subjoin a brief account of the method adopted at the model Prison, Pentonville, in which the system of Separate confinement is adopted.

The most important point in this and all similar prisons is, of course, the ventilation of the cells, the main objects of which are thus stated:—

"1st. The withdrawal of a stated quantity of Foul air from each cell.

"2nd. The supply of an equal quantity of Fresh air into each cell without subjecting the occupier to the prejudicial effect of a draught.

"3rd. The means of warming the fresh air when necessary, without injuring its qualities or affecting its hygrometrical condition.

"4th. That no additional facilities for the transmission of sound should be afforded by the air channels or flues."—*Report on the Construction, Ventilation, and Details of Pentonville Prison*, p. 18.

The following is the mode of carrying out these objects. An apparatus for warming the air when required, consisting of a boiler, is placed in the centre of the basement story; from the top of this boiler a rising main communicates, in the usual way, with any number of pipes which may be required for the circulation of hot water, the return-pipes being introduced at the bottom. Around the boiler is an air flue, into which the external air is admitted and is subsequently conveyed along tubes or flues placed under the floor of the corridors, and from thence passes upward through small flues preserved in the corridor wall, which terminate respectively in a grating placed close under the arched ceiling of each cell. A grating is placed close to the floor of each cell diagonally opposite to the point where the fresh air is introduced; this grating covers a flue in the outer wall, opening into a horizontal foul-air flue in the roof of the cell, which communicates with a vertical shaft raised 20 or 25 feet above the external roof. The deteriorated air of each cell is withdrawn by the action of this shaft, the air of which is rarefied, in the Winter by the fire of the boiler, and in the Summer by a small fire provided for the purpose at the bottom of the shaft: it is found that, if an average difference of 5° to 10° above the external temperature be maintained, the desired effect is produced. From a series of experiments performed by Dr. O. Rees, the principal medical officer of the establishment, the following facts have been determined:—

"1st. That from 30 to 45 cubic feet of pure fresh air is made to pass into every cell in a minute; and that the ventilation is maintained with great regularity.

"2nd. That this amount of ventilation, and a temperature ranging from 52° to 60° can be uniformly maintained in the cells during the coldest weather, at an expense of less than a farthing a cell for 24 hours.

"3rd. That the same degree of ventilation is effected during the summer months at less than half that expense."—*L. c.*, p. 25.

The general results of this important experiment have doubtless been satisfactory, but we have been informed, by a high authority in these matters, that much still remains to be done to secure complete success. One fundamental error extending throughout the whole of the cells will not have escaped the notice of our readers—the insertion of the grating for the escape of the foul air in the floor, and the introduction of the fresh air at the ceiling. In all improvements of this kind it is essential to bear in mind, that the carbonic acid gas generated by respiration (notwithstanding its intrinsically superior specific gravity) being rarefied by the heat of the body in all warm-blooded animals, becomes lighter than common atmospheric

air, and so ascends towards the ceiling, from which, if no escape be provided, it begins to descend, partly by becoming cooler, but principally by diffusion. The same thing also happens in the case of gas-lights, lamps, &c., the heated carbonic acid ascends. In every instance, without exception, in which openings are made for the escape of the products of respiration and combustion, they should, for these reasons, be placed at the upper part of the apartment, or otherwise it is inevitable that the indwellers must breathe a contaminated atmosphere.

The removal of the noxious products of combustion forms an essential part of ventilation in all places where gas-lights and lamps are used; and this has become a point of increased importance in consequence of the general use of gas, not only in shops and public institutions, but in private houses. The simplest and most inexpensive plan is the one now often adopted, to affix, namely, a tube over each burner, carrying this either through the ceiling or roof, or, which is often much better, into the chimney, so as to form a draught of which advantage may be taken to ventilate the room itself. In all these cases, however, it is desirable to make the apparatus which removes the products of combustion, at the same time ventilate the apartment. This has been accomplished by some of the London lamp-makers, and in such a manner as to be ornamental, rather than otherwise; but, as cheapness is in all these matters of primary consequence, we are desirous of noticing a most economical contrivance, described in the report on the state of Exeter by Dr. Shapter. A copper tube, one inch in diameter, is suspended over the glass chimney of an argand gas-burner; the upper part of this tube enters for about one foot into a tube of similar shape but of double the diameter; this larger tube has a wide trumpet mouth, the lip of which is exactly on a level with the ceiling, and can thus receive the vitiated air of the apartment; finally, the upper end of this large tube is carried through the roof, and is protected at the top against the rain by a conical cap. The mode of action is as follows:—"The column of hot air discharged by the glass chimney passes through the smaller tube with great velocity into the large tube, in which it occasions a rapidly ascending current; whilst, therefore, the smaller tube carries into the larger one all the air vitiated by combustion, the larger tube discharges through the roof, not only the air which is received from the smaller tube, but also the air vitiated by respiration or other causes, which it sucks up from the upper part of the room." This simple and effective apparatus, invented by P. C. De la Garde, Esq., has been in constant use at the Devon and Exeter Institution upwards of seven years, during which time "it has required no cleansing, reparation, or indeed attention of any kind whatever." —*Octavo Report on Exeter*, p. 23.

Our notice of the important matter contained in the Reports and Evidence of the Commissioners of Inquiry has occupied so much space, that we can merely cursorily refer to the remaining works of which the titles are inserted at the head of this article. "The Health of Towns Association" has published some useful tracts with the view of conveying to the public, a knowledge of the main facts elicited by the above-named Commission, and also of preparing the way for those sanitary measures which, as we have endeavoured to show, are so urgently demanded. These pamphlets are well adapted to secure the objects for which they are designed,

and we therefore recommend them to the perusal of our readers. Mr. Gir. dlestone has also published a very useful Abstract of the Evidence, and his "Letters," illustrated by many wood-cuts, may be consulted with great advantage, as presenting a well-digested resumé of the whole question.

It has been our object, in the present article, to lay before our readers a comprehensive view of the bearings of the Sanitary question, which, at this time, engages so large a share of the public attention, and which must of necessity, from the momentous and varied interests concerned, occupy a prominent place in the proceedings of Parliament during the next Session. To our professional brethren more especially the matters we have considered are deeply interesting, and, as many of them will be hereafter called upon to take an important part in the introduction and suggestion of improvements, and as all of them are frequently consulted on the means of obviating the causes of unhealthiness in towns and other populous districts, it becomes no less their interest than their duty, to master the whole subject of which we have, in the present article, notwithstanding the large part of our space we have thought it right to devote for the purpose, only given an outline.

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ON THE NATURE, CAUSES, PREVENTION AND TREATMENT OF ACUTE HYDROCEPHALUS, OR WATER-BRAIN FEVER. By *Thomas Smith*, M.D. 8vo. pp. 168. London, Longmans, 1845.

HYDROCEPHALUS is so frequent and so destructive a disease that a new publication concerning it is sure to challenge due attention. The present Essay, however, is unfortunately addressed to both the general and the professional reader, the inevitable consequence being, that it treats of topics which the former can neither comprehend, nor would benefit by comprehending, while it contains but little allusion to various points respecting which the latter is anxious for additional information. We hold that attempts at the instruction of the public in the "nature, causes, prevention, and treatment" of important diseases are not only useless, but fraught with danger. They beget an injudicious meddling and self-sufficiency in some minds, and needless and nervous apprehensions in others, by which the unfortunate little patient is often driven into the very evils sought to be averted. Before saying more upon the subject, it will be better to place the view Dr. Smith takes of it before our readers.

"If a popular treatise on any malady or class of maladies be desirable, it will surely be so on one which, when once established in its most decided form, is generally admitted to be unmanageable and without hope. It is because hydrocephalus is a desperate, and but too frequently, an incurable malady, that, so far as I am able to form an opinion, it is of the utmost importance that the medical attendant, the parent, and the nurse, should be on the alert to watch the threatening signs of its insidious approach, and by a seasonable interposition of diet, regimen, and remedy, to oppose the mischief at its onset. It may be stated, without hazarding any doubtful responsibility, that this fatal and rapidly growing disease ought not to be ranked with those whose progressive advance can neither

be seen nor prevented. It very seldom sets in but as the result of a previous and gradual change in the condition of the child's system, tolerably manifest to the observation of an attentive parent or nurse; yet, how frequently little or nothing is done to arrest its further progress, until the active form presents itself; and then the family medical attendant has barely to announce the *name* of the disease, and every mother at once recognises the knell of death in the sound.

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"To the most severe and uncompromising critic, who may ask to what good end this, my effort, may lead, my answer is, I have found medical and popular literature equally deficient in suitable admonitions to parents and nurses. I have found statistics telling us that one-eighth of infantile deaths in crowded towns have occurred from water-brain fever. I have found my own profession, with regard to the disease in its least equivocal form, confessing the impotence of medicine, and physicians pursuing, as the result of habit, the same uniform, authorized, but unsuccessful treatment of the disease, as on a mere routine without hope, without encouragement, without comfort, and without consolation; meeting in consultation in such cases merely to reflect reciprocal humiliation, and to indulge in reciprocal confessions of incompetency. I have found them persisting in a plan of treatment in which generation has servilely imitated generation, and under which an occasional recovery has been more a matter of wonder, and occurring more from the intervention of some unexpected constitutional effort in the patient, than from any well-directed aim of science." * * *

"In such a position, after duly weighing all authorities, and having had many opportunities of comparing my sentiments with those of my contemporaries, if I have determined to try to lay down a *beacon* or two, by means of which even a few lives may be saved, and much misery prevented, it ought rather to excite surprise that I have not long ago been anticipated in the performance of what may justly be called a duty of humanity, long neglected. And although others after me may perform the same duty more ably, and perhaps more successfully, I may at least claim to myself the credit of first pointing the way." P. v.

After the perusal of the above rather grandiloquent introductory passage, we turned to the chapters on the means of Prevention, naturally expecting to find some novel suggestions or improved prophylaxis; but great was our disappointment, since we found nothing there but has been more fully and better told by Dewees, Eberle, Evanson and Maunsell, Barlow, Combe, and numerous other writers, who have of late years treated upon the Physical Management of Children. What the author means by saying he is the first to lay down the beacons derivable from these instructions, we know not. He may be the first who has engrafted them upon a professional treatise on hydrocephalus intended for popular perusal, and thereby seems to us to be running far more risk of planting rocks than of raising beacons. Professional men are well engaged in endeavouring to impart to the public approved rules for the preservation of health—the principles of hygiene—insisting that recourse should be had to their assistance when any aberration from the healthy condition occurs. The author may tell us that his work is addressed to this end; but if so, why couple with his hygienic precepts, which are just as applicable to the prevention of any other diseased condition as this, an account of the symptoms, diagnosis, treatment, &c., of hydrocephalus. When we consider the difficulty that frequently exists in the detection of this disease, and the errors able and practical men not unfrequently fall into respecting it, the scheme of enabling nurses, parents, and the like, to compass this by furnishing them with an accurate account of its well-marked form, seems to

us, to say the least, a very foolish one. If Dr. Smith believes these personages will confine their attention to the portion of the work suited to their capacity, he can know little of the habits of the class whose instruction he is labouring for; for however inapplicable the maxim, "that a little knowledge is a dangerous thing," may be in general, we have had too often to deplore their meddlings and thwartings to doubt its infallibility as regards the management and treatment of disease. The arguments for endeavouring to popularize the recognition and management of this disease are just the same fallacious ones the notorious Buchan—whose work has consigned thousands to their graves—employed long ago.

Although the term Hydrocephalus is a defective one, as only indicating one of the effects of the diseased condition, it is perhaps not very easy to substitute a better; and indeed, when employed in the sense which Heberden first attached to the term Dropsy, suffices well enough: "*Hydrops non tam ipse morbus est quam alicujus morbi signum.*" Dr. Hennis Green, and the writers of the French school who have succeeded him, term the disease *Tubercular Meningitis*, on account of the very great frequency with which tubercles, or lardaceous deposits are found in the inflamed pia mater. Of 60 cases observed at the Children's Hospital at Paris, Dr. Green found these appearances in 56. MM. Rilliet and Barthez found the same 29 times out of 33 cases, and M. Bouchut in six out of nine cases. This complication, however, does not by any means so frequently occur in this country as in France; and the exceptions even allowed by the above-named authors should suffice to prevent this term being accepted. However this may be, the intimate connection of the disease with the *strumous diathesis* has been long observed. The observations of English, German, and French writers, but especially the latter, all tend to show the rarity of the occurrence of hydrocephalus without tuberculization of some one or more organs of the economy. Still there can be no doubt that cases of this disease do occasionally occur in subjects unaffected with tubercle, it being then a simple inflammatory disease, which may come on primarily in an otherwise healthy subject, or secondarily as a consequence of scarlatina, &c. In the vast majority of cases it is the strumous and far less manageable form of inflammatory action which prevails. Dr. Smith considers the disease as analogous to the *nervous fever* of adults, and, but for the inconvenience of changing names, would term it *infantile nervous fever*, or, as he expresses it on the title-page of his work, "*water-brain fever.*"

*Symptoms and Stages.*—"In 1768," MM. Rilliet and Barthez observe, "appeared Robert Whytt's remarkable dissertation; and, as regards the symptomatology, it is even now the best work that has ever yet appeared. We cannot too much admire the talent for description, and the eminent spirit of observation, which shine through every page of this interesting monograph; nor praise too much the ideas, full of justice, by which the author seeks to explain the development of the different symptoms." Whytt divided this disease into three stages, the varying state of the pulse forming a principal indication; this being rapid in the first or precursory, and in the last or convulsive stage, and slow in the second stage, when stupor first commences. To this there are exceptions; and, although his arrangement has been generally followed, it would be preferable, M.

Bouchut observes, to take into account the *ensemble* of the symptoms rather than any one. This writer terms the three stages Germination (which distinguishes the disease from simple meningitis of infants,) Invasion and Convulsion. MM. Rilliet and Barthez seem to doubt the expediency of this division into stages, observing that the disease in all their cases manifested continuity; one or more symptoms may have remitted, but this has never been the case with all. Dr. Smith adopts the division of Whytt into three stages, that of excitement, of effusion, and of convulsion, attributing a medium duration to the whole of them of about 21 days: or, dating from when the child first manifested feverishness, change of temper, &c., of from four to six weeks. Of 117 cases, Dr. Green observed death to occur within 7 days in 31;, 14 days in 49; 20 days in 31; more than 20 days in 6. MM. Rilliet and Barthez have never seen death occur before the 7th day, and usually between the 11th and 20th. The premonitory symptoms are accurately but cursorily described by Dr. Smith, who observes that "any intelligent parent or nurse may remark the gradual change taking place in such infants." They may observe this change, but will often, as experienced observers even have done, mistake other affections for it; and when they do recognize it, we believe the author is too sanguine in assuring them that farther mischief may be arrested; for we fear there is too much truth in Dr. Hennis Green's opinion, that these symptoms are indications of the presence of chronic meningeal inflammation—too often irremediable.

*The Pulse.*—MM. Rilliet and Barthez state there is nothing to be added to Whytt's observations, which only require slight modification. They observe:—

"The acceleration is of short duration, and in a few days the pulse does not fail to offer the normal number of beats, or even fall below these, this diminution continuing for a variable period, but always in relation to the duration of the disease. So that, if the pulse only beats 60, 80, or 90, we may be certain that the disease will be prolonged for some days; but as soon as a new acceleration occurs we must regard a fatal termination as approaching, within the limits of from two to three days, or in some exceptional cases between five and six. When the pulse recommences quickening, it generally beats from 112 to 120, and if this occurs on the very day of death from 140 to 160. In the cases where the increase occurs at a considerable period prior to the fatal termination, there is a continued progression until that moment arrives. The rapidity of the pulse is such then as hardly to be measured; we have counted it from 192 to 200 the evening before or day of death. * * * We have so much insisted on the character of the pulse, because, from among a considerable number of diseases of every kind, simple or complicated, acute or chronic, we have hardly ever found the pulse at once slow and irregular, except in the tuberculo-inflammatory affections of the brain and its dependencies."

Whytt states that the pulse is from 130 to 160 at the commencement of the affection: but the observations of Dr. Hennis Green are quite at variance with this statement. According to this talented author, the pulse is always *slow* at the commencement of the disease, *i. e.*, between the period of the occurrence of headache and vomiting, and that of somnolency. Of 19 cases observed, with reference to this point, in two only did it exceed 100. It averaged 80, and in some it was as low as 54.

Dr. Smith observes:—

"In Hydrocephalus the pulse during the first stage is much accelerated, full, but more easily compressible than in encephalitis, with a perceptible variation in the rhythm of the artery, and in the regularity of the strokes. The pulse sometimes beats as quick during one-third of a given time as it had previously done during the former two-thirds. Thus, in a child whose pulsations were 140 a minute, I have witnessed half, or 70 strokes, performed in 40 seconds, and the remainder in the other 20 seconds. There is also a distinct intermittency in the 7, 17, or 20 pulsation, and it often changes its character; one or two strokes, in quick succession, may be felt soft, weak, and fluttering. In the second stage, the pulse sinks and becomes slow, laboured, intermitteut, and irregular, and is easily quickened by motion, or mental disturbance, to double its amount of pulsations." P. 31.

As to the symptoms referable to the abdominal organs; the *appetite* is seldom entirely lost. Every author since the time of Whytt has acknowledged the importance of *vomiting* as a symptom. Rilliet and Barthez observe that it generally occurs on the first day, and very rarely later than the second or third, usually continuing only for two or three days, although at other times for a much longer period, being very seldom re produced after disappearing. M. Piet thus states the value attached to this sign: "If, in a child that has been vaccinated or had the small-pox, who digests well, and is suffering neither from bronchitis nor pertussis, vomiting, whether simple or bilious, occurs, accompanied or preceded by a more or less continued headache, there is every reason to fear an approaching meningitis, especially if the child is tuberculous." Dr. Smith observes that it is usually spontaneous and unattended with nausea, while, after its occurrence, food is often taken with avidity. The value of vomiting as a symptom becomes of much more importance when conjoined with *constipation*. This, although a frequent, is not a constant symptom, but is of very difficult removal when it does occur. Diarrhœa, however, usually supervenes before the termination of the disease. Another symptom usually occurring about the sixth day, but sometimes later, is a *retraction of the walls of the abdomen*. MM. Rilliet and Barthez observe—"The belly becomes depressed at its centre and takes the form of a boat; the contraction being sometimes carried so far as to allow the beating of the aorta to be felt. It is almost a constant symptom, and does not depend on the constipation, as it often comes on when diarrhœa replaces this. It is almost exclusively in cerebral affections we have observed this symptom." Of the *urine* in hydrocephalus Dr. Smith observes:—

"The urine for the most part is of a deep amber hue, of high specific gravity, sometimes milky, and deposits a whitish slimy sediment, smells offensively shortly after being passed, and in its passage along the urethra occasions pain. The character of the urine in Hydrocephalus is essentially different both in its composition and appearance from that evacuated in phrenitis or inflammation of the brain. In the latter disease, it is generally of a dark brown or porter colour, and contains more urea, and less of the lithates than the former. The deposit also is mostly of a reddish or reddish-brown hue." P. 9.

We need not enter into any detail of the cephalic symptoms, extracting however, the following passage upon that of *coma*, from the treatise of MM. Rilliet and Barthez:—

"Is there any relation between the anatomical lesions and the coma? In the

three cases in which coma and somnolence were entirely absent, we twice found a considerable inflammation of the pia mater at the base, and in the other case innumerable granulations, and a superficial ramollissement of the grey substance. The ventricular effusion was slight, about an ounce or two in two of the children and was quite absent in the other. Is it to the slight quantity or absence of this fluid we are to attribute the absence of the coma? In looking over other of our observations, we find the quantity of effusion not to be more considerable, and yet the coma complete. In all the other cases where it has been profound, we have found a considerable ventricular effusion at the autopsy."

Dr. Smith makes a remark or two upon the *cough* so commonly met with in Hydrocephalus.

"A slight false cough, which partly resembles a suppressed effort to vomit, and not unlike the morning liver cough of spirit drinkers, is not an infrequent attendant throughout the three stages. Alibert notices this symptom in conjunction with embarrassed breathing, as a sign of ventricular effusion. In vain will the practitioner try to relieve this cough with anodynes and demulcents; and it may be, that the chest shall be charged as the seat of the mischief, and the treatment, of a bronchitis or infantile pneumonia, shall be insisted on, whereas, it is but a sign of a certain condition of the brain and nervous system. * * * * * The cause of the cough above alluded to, appears to me to arise from irritation of the cerebral extremities of the pneumogastric nerve. Hence the various anomalous symptoms which occur in the stomach, diaphragm, liver, &c., indicated by vomiting, sighing, sobbing, and epigastric tenderness." P. 13.

*Diagnosis.*—We entirely agree with Dr. Smith in his opinion, that those practitioners who boast so much of their success in treating this affection, have mistaken phrenitis or some other form of disease for it. Many of the observations of this chapter would have found a more proper place in that treating of the symptoms of the disease. We will extract a few of those which are more properly speaking diagnostic. The *headache* of hydrocephalus is of a lancinating, paroxysmal character, and accompanied by involuntary ejaculations. "If desired to shake the head, the child usually essays the attempt, and suddenly stops, uttering the most piercing cry, and holds the head fast between the hands. The head feels heavy and full anteriorly, and there is a strong tendency to rest its frontal surface against the pillow." *Vertigo* is of more gradual approach and longer duration than in phrenitis, and is especially felt on assuming the erect posture. The *stupor* is usually more intense and longer continued than in other cerebral affections. Rheumatic and colicky pains are found oftener in the *abdomen*, together with tenderness along the cervical and dorsal vertebræ. They increase as the disease advances, effecting especially the hypogastric and epigastric regions. The *respiration* and *pulse* do not observe their usual consentaneous action. The pulse may beat from 140 to 160 per minute, while the respiratory movements do not exceed 40 or 50. "The respiratory effort is, for the most part, performed in a quick, hurried, convulsive manner, and there is a marked increase in the duration of the expiratory act and the period of repose; deep and prolonged sighing often intervenes, and considerably diminishes the amount of the respiratory movements." Dr. Smith thinks that late writers have done wrong in slighting the diagnostic value of the appearance of the

*fæces*, taken in connexion with the obstinate constipation which also prevails. "Compare the evacuations of a patient in phrenitis, small-pox, or remittent fever; do we find them possessing the same tenaceous, gluey, glossy properties, and cadaverous smell, which characterize the stools in water-brain fever? The fæces in all these affections may, it is true, be offensive, but are they, at the same time, gelatinous or glary?" The *eye* is morbidly sensible to light, but not injected as in phrenitis. "The pupil, as has been before observed, is always dilated in idiopathic hydrocephalus: it is only when the disease is complicated with inflammation of the brain or its membranes, that it is permanently contracted." The author attributes the occasional *spasmodic contraction of the eyelids*, resisting the exposure of the eyeball, and considered by Dr. Green as pathognomonic of the affection, to irritation of the filaments of the fifth pair supplying the orbicularis, and from the same cause there frequently exists, in connexion with it, itching of the alæ nasi and lower lobe of the ear. The auditory nerve is acutely sensible to impressions, but the olfactory becomes obtuse.

Dr. Smith believes that *cerebral auscultation* may furnish considerable assistance in distinguishing congestion, effusion, and the hydrencephaloid disease. The *inspiratory cephalic murmur* resembles a soft interrupted blowing, such as may be produced by blowing through any narrow wooden tube without compressing the lips. The *cardiac cephalic bruit* conveys "to the ear the impression of the finger gently tapping a soft elastic body, as a thin India-rubber ball, or a bladder partly filled with water. It is similar to the sound heard in the femoral artery, in a plethoric subject, on lightly applying the stethoscope." 3. The *vocal cephalic resonance* is sharp and piercing, imparting a vibratory sensation to the hand and ear. 4. The *cephalic sound of deglutition* is of a dull massive liquid character.

"When disease affects the brain or its involucra, a sensible alteration is manifest in the cephalic sound of the heart and the voice. The former, especially, notifies the commencement or existence of some change in the normal condition of the brain, when it alters its character, from a soft and feeble to a rough, harsh, or blurting sound, which in the hydrencephaloid disease is accompanied with a musical intonation of the arteries, very easily recognized and remembered when once heard. This sound is of varying intensity, according to the activity of its cause, and may be imitated by drawing the finger quickly and heavily across a piece of velvet or fustian. It is loudest in cerebral congestion, apoplexy, and in the stage of effusion, when the circulation is abnormally slow, and then not infrequently becomes rough, harsh, grating, rasp-like. In simple excitement or erethism of the brain, in commencing hydrocephalus and phrenitis, this sound is softer, quicker, more like the bellows-sound of the heart, heard in endocarditis. * * * * * * Should any thin fluid have accumulated in the head, a modification is heard in the sound of the voice transmitted through the osseous parietes of the cranium; the nature of this sound is trembling, sharp, and bleating, and it has a silvery tone not unlike the one produced in pleuritic effusions, and it may with propriety be termed the cephalic ægophony. It is very easily discerned in large aqueous collections of the skull, where the fluid is dispersed over the whole surface of the brain, and also in those cases of chronic hydrocephalus where the ventricles are considerably distended with watery accumulations. This sound may likewise be recognized in the stage of effusion in acute hydrocephalus and inflammation of the brain, &c.: but it is n less defined, becoming more sharp, clanging, vibratory. In sanguineous

extravasations, the voice appears increased in intensity, but little altered in its sonorous properties. * * * * * The physical signs of the head, whilst they are not pathognomonic of any individual affection of the brain, are nevertheless exceedingly useful in assisting us to decide upon the existence, or otherwise, of disease located there or elsewhere; also whether serous effusion shall have taken place or not, and how far the disorder is one of the head only, or complicated with disease of the respiratory organs. Though I have for years attentively studied the auscultic phenomena witnessed in common in various lesions of the brain, I cannot satisfy myself, that as yet we possess any definite knowledge, which may be said to indicate with certainty, any individual or peculiar malady of that organ; but they are merely descriptive of sundry morbid changes occurring in that viscus, the result of numerous causes, whose separate effects are not at present appreciable to our senses, or distinguished by their means one from another." P. 41.

*Etiology.*—Dr. Smith rejects the doctrine of the hereditariness of hydrocephalus, and attributes its production to the various adverse hygienic circumstances influencing the child, both prior and subsequent to, its birth.

"The latent causes of Hydrocephalus I take to be a strumous or lymphatic constitution, engendered not infrequently by a too highly excitable condition of the nervous system in the mother, which deprives the fœtus in utero of its due supply of nutrient aliment. This serous habit of body may also result from the want of suitable dietary, clothing, and out-door exercise, so that any previous morbid impression made upon the infantile frame acquires from these causes increased activity. That it mainly depends upon ourselves, and our modes of living to avoid the numerous ills to which flesh is heir; and that remedying our own bad habits, improving our dwellings, and paying more rigid attention to the quality of the food we eat, are capable, in the majority of instances, of eradicating and preventing a host of formidable maladies, amongst which diseases of the nervous system occupy a prominent place, is indisputably proved by the facts collected by numerous authors who have minutely investigated the subject of infantile Hygiene." P. 47.

Subscribing to the truth of the above, we still demur to the statement of its not being hereditary. Indeed, when the author allows the existence of a "family predisposition" in some instances, we think he admits enough; for no one can pretend that more than the disposition is transmissible. In fact, believing that hydrocephalus, as distinguished from phrenitis, is generally a tuberculous or strumous disease, we also believe the proof of its transmission is as strong and no stronger, as is that of the transmission of any other form of scrofula or tubercle. The author properly dwells upon the necessity of parents, especially mothers, conforming to the laws of hygiene, if they wish to rear healthy offspring; and indeed little excuse can now be found for those who persist in violating these, after the rationale of the generation of phthisical disease in the offspring of the dyspeptic, so ably delivered by Sir James Clark.

In corroboration of the propriety of placing hydrocephalus in the category of tuberculous diseases, the age at which it usually occurs may be cited. Of 155 cases, collected by Dr. Green, 45 were aged from 2 to 4 years; 54 from 5 to 7: 29 from 8 to 10: 22 from 11 to 13, and but 5 above 13. The greater number being thus aged from 5 to 7, which is the period at which tubercle according to Papavoine's researches most usu-

ally shows itself in children. MM. Rilliet and Barthez observe, that children are especially liable to hydrocephalus between 6 and 10; then from 3 to 5; then from 11 to 15; and least so from 1 to 2. Uniting their cases with those of MM. Guersant and Piet, they furnish the following numbers. Before 1 year, 3 cases; between 1 and 3, 7; between 3 and 5, 45; between 6 and 10, 84; and between 11 and 15, 29.

*Morbid Anatomy.*—To this Dr. Smith is disposed to attach no importance, believing the disease to be an idiopathic nervous fever, during the course of which inflammatory action may or may not be set up in the head—the instances being very numerous in which neither it nor consequent effusion is discoverable after death.

"To enumerate a variety of cases, in which limpid effusion, softening, slight opacity of the membranes, either on the surface of the membranes, above or at the base of the brain, the bronchial, thoracic, or abdominal signs of tubercular deposit, or granular disease, is, in this view of the pathology, less important, and almost unnecessary. For I should no more expect to arrive at just notions of the pathological condition of its admonitory and subsequent stages, by meditating upon the accumulated and curious statistics furnished by necropsy, than I should expect to arrive at a true knowledge of the essence of any idiopathic fever, simply by contemplating its ravages after death." * * * * * * * * * "In the gradually advancing condition of more perfect ossification, when the more intimate continuity of structure between the dura mater and the pericraneum is in a great degree cut off, Hydrocephalus is said no longer to beset the path of the juvenile adult, simply because, although the adult may have the same condition of blood, the same strumous diathesis, and the same high susceptibility of nervous system, he will not have the readily yielding texture of the soft contents of the cranium, nor the same facility of hyperæmial condition of the external and internal blood-vessels of the cranium, and, therefore, not manifesting those early symptoms which Dr. Cullen denominated Hydrocephalic Apoplexy. The fever of such adults will maintain the name of febris lenta nervosa, or pure nervous fever. All that has been said touching the contradictory phenomena of inflammatory appearances, confidently adduced as a set-off against those innumerable cases in which such appearances have been wanting, serves only to confirm this opinion; and is so far a proof that Hydrocephalus is not in essence an inflammation, much less a dropsy; but that it may or may not be accompanied with inflammation in its progress,—may or may not lead to effusion in its progress, just like any other idiopathic fever." p. 68.

This generalization will, we believe, be admitted by few, although most will also allow that its opposite, the doctrine of Dr. H. Green and the French school, that a deposition of tubercle in the meninges is an essential character of the disease, has been also too broadly stated.

*Treatment.*—In detailing the various rules for the preservation of public and personal health, Dr. Smith reiterates his claim to an originality which cannot be allowed. "In truth, the ground is left to me without a competitor, no one having thought it worth his while to be at once an instructor and admonitor of mankind!" Other "instructors and admonitors" have wisely directed their attention, not to the preservation of health from this or that disease, but to the fortifying it from attacks, come they from what quarter they may; and so many "competitors" of name and note are there in this useful work, and so wide has information been diffused by

them, that we much fear their advice and suggestions having hitherto been so imperfectly followed, has not arisen in many cases from a want of a due sense of their importance, but from the anomalous and entangled condition of our present social system presenting great obstacles to the realization of many advantages and improvements, apparently of easy attainment. Much, however, capable of accomplishment remains yet to be done; and we welcome our author as a worthy labourer in so useful and fertile a field, although we should have been better pleased had he done some homage to the numerous sowers and reapers who had pre-occupied and prepared it.

When applied to furnish *prophylactic treatment* for children suffering but trifling indisposition to appearance, but in whose family the disease has already manifested itself by attacking some of the other children, the author judiciously recommends due attention to be paid to the alvine, renal, and cutaneous secretions, to which end he prescribes measures which will suggest themselves to all practitioners. He also employs, what he terms "a revulsion bath"—a bath so contrived (an engraving of it is furnished) that cold water may be poured upon the head while the rest of the body is in contact with heated water. He also recommends some form of counter-irritation to be applied to the nape or behind the ears.

For the *treatment* of the disease when developed, Dr. Smith states the same indications present themselves as in the fevers of adults.

"If a few cases will bear blood-letting, and may be promptly arrested by it, there is nothing new in the observation or the practice, for all our predecessors have recorded this as a noticeable fact, with regard to fevers in general. From the period that this disease sets in, the chain of febrile symptoms is as little interrupted as in any idiopathic continued fever known in our climate. * * * * * * * Therefore it is that I say, treat Hydrocephalus as you would any other nervous fever, and such treatment will give you the best chance of success. If it be characterized by strong inflammatory signs about the head, by deep-coloured urine, strong pulse, and steadily increased heat of surface, injected tunica conjunctiva, urgent thirst, suffused face, and, above all, by disposition to violent restlessness, simulating in a degree that of phrenitis, blood-letting is just as admissible as it may be in a typhus, a synochus, a miliaria, or a lingering nervous fever, under the like modifications. If, happily, now and then, such treatment may, within the first forty-eight hours, arrest the mischief, so also it may in inflammatory typhus. If, however, while the general condition of the blood-vessels indicate debility, that of the cerebral vessels show distension or oppression, in the sinus system especially, a few leeches may be admissible. So also in other fevers. Or if debility, nervous irritation, and struma, are the characteristics of our patients, neither general nor topical depletion, will offer reasonable expectation of benefit. The revulsion bath alluded to, and already described, should be employed twice a-day; or the sponge-cap,—formed of pieces of thin sponge, sewed together, and having a leathern strap as a border to secure it,—may be used to cool the head, spirituous, or freezing mixtures being employed to moisten it." P. 162

The author recommends "a [*vomit* of ipecacuanha, worked off with mustard whey," to be given two or three evenings in succession, after the first appearance of the disposition to natural vomiting. Sustained rather than violent *purging* should be instituted; commencing with calomel and jalap, and then resorting to cream of tartar, toasted jalap, or castor oil, "nor should a day pass without administering a clyster, in which, and

with the purgatives, as in nervous fever, or subsultus, I would combine valerian, castor, assafœtida, and other remedies of that class." Just as in other fevers, also salines and diuretics may be given, as also small doses of mercury, not, however, with any intention of producing its specific effects. The diet must be regulated also as in fever; and, prior to advanced effusion, small doses of laudanum, syrup of poppies, Hoffman's anodyne, &c., may be given to calm irritation. In the second and third stages counter-irritation is indicated.

"From the foregoing observations, it will appear that the principal indications to be fulfilled in the treatment of this malady are, if possible, to produce a favourable crisis, by the steady and free action of the abdominal or cutaneous secretions. Hence free catharsis, free diuresis, or free diaphoresis, by whatever means these separate states of the system can be obtained, offer the most reasonable prospect of recovery. The employment of specific medicines, such as bichloride of mercury, iodine, tincture of Spanish fly, tartar emetic, &c., appears to me to be founded on erroneous impressions, touching the nature and essence of the disorder, and in the majority of cases will be utterly inadequate to the end proposed." P. 166.

The analogy here attempted to be traced between the hydrocephalus of children and the fevers of adults is defective, and in no particular more so than in the important one of the result of treatment, as exemplified in the infinitely greater mortality of the former disease, compared with that of the latter. In fact, hydrocephalus is more easily confounded with other diseases than the author's directions to parents and nurses would lead one to expect; and, however some of these febrile and inflammatory affections of infancy might be benefited by the treatment above suggested, we should entertain little hopes of the genuine disease being thus vanquished. It is easier to criticise one mode of treatment of the disease than to propose another more likely to be of avail. This we frankly confess we are unable to do, and much fear that it is but too true, that hydrocephalus once developed is seldom, if ever, curable. In proportion as correct ideas of the pathology of the disease—its intimate connexion with, if not its absolute dependence upon, the strumous constitution—have prevailed, has confidence diminished in that mode of procedure which would treat it as a purely inflammatory affection. We approve of the moderation and discrimination as regards blood-letting, inculcated by Dr. Smith; for, although we are far from participating in the unreasonable fears of bleeding children expressed in Mr. Hood's recent work, and believe that the saving their lives often depends upon this being abundantly and promptly resorted to, yet we feel certain that hydrocephalus is not one of the diseases in which recourse can be had freely to it. The excessive depletion advised by Maxwell, Davis, and others, is quite inappropriate in genuine examples of this affection. Phrenitis and arachnitis have been, in some instances, doubtless mistaken for it by these authors; and in too many others, cephalgia and febrile action, proceeding from more innocent causes, have been hastily assumed as indicative of hydrocephalus; and although they would have yielded to moderate measures, have been unnecessarily and injuriously submitted to this "heroic" treatment.

I. REPORT ON SMALL-POX IN CALCUTTA, (1833–4, 1837–8, 1843–44,) AND VACCINATION IN BENGAL FROM 1827 to 1844. By *Duncan Stewart*, M.D., Surgeon E.I.C.S. Superintendent-General of Vaccination. 8vo. pp. 260. Calcutta, 1844.

II. OBSERVATIONS ON VARIOLA VACCINA, OR COW-POCK. By Sir *Matthew Tierney*, Bart., K.C.H., M.D. Brighton, 1845.

WELL nigh half a century has elapsed since Jenner, by his *experimentum crucis* of unsuccessfully inoculating James Phipps after vaccination, offered to the world a demonstration of the greatest blessing it has ever yet received at the hands of medicine; for, however great difference of opinion may now exist as to the precise extent to which protection from a loathsome and fatal disease is secured, all will agree that the benefit derived from the practice is inestimable. Consider for a moment the position of mankind as regards Small-pox at the period of the discovery of Vaccination. The practice of Inoculation, after long struggling against popular apathy and clerical and medical opposition, had, during the latter half of the 18th century, become firmly established—the difference in the rate of mortality in the natural and communicated disease having attracted universal attention. For, while in the natural disease at least one in six died, and a large proportion of those who escaped were dreadfully disfigured and otherwise injured, in the inoculated the mortality was but 1 in 50, and, after the improvements introduced by the Suttons, 1 in 200 only, while the subsequent attack, of those inoculated, by the natural disease was a very rare event indeed. Yet, what was salvation to the individual, became destruction to the community, so that at the period of the discovery of vaccination, by reason of the infinite multiplication of *foci* of infection, small-pox continued as rife as ever!—40,000 persons dying annually of the disease in England alone, with a population of nine millions. Lettsom estimated the deaths in Europe from this cause at 210,000, and Bernoulli those of the world at large at 600,000 annually. Indeed the proportion of small-pox to other causes of death continued augmenting, for while it was but 72 per 1000 for half-a-century prior to the discovery of inoculation, it reached 85 per 1000 in the subsequent forty years, and mounted up, according to Sir Gilbert Blane, to 95 per 1000 during the last thirty years of last century.

Unfortunately, when we wish to exhibit to the best advantage the vast benefits which have been derived from vaccination, it is not to our own country we must have recourse for the necessary data; for, it is a fact, as strange as discreditable, that the birth-place of this brilliant discovery has been of all European countries the most negligent in availing itself of its blessings; and has never, until at least the last two or three years, given its preventive efficacy even the semblance of a fair trial. All has been left to the fitful operation of popular enthusiasm, with its alternations of action and apathy. The Report of the Registrar-General, reviewed in our last number, exhibits some of the effects of this *laissez aller* system; for while deaths from small-pox amounted in France, in 1842, to about 91

in 1,000,000; and those in Austria to 4619, 5189, and 4411 in 1840–1–2 in a population of above 21 millions, in England they amounted, prior to the introduction of the present Vaccination Act, to from 9000 to 16,000 in a population of less than 13 millions. The contrast might be rendered still greater, were the comparison carried into those continental states, as Denmark, Sweden, &c., in which vaccination has been rendered peremptory. We have no statistical data for exhibiting the numbers of our infant population which yet remain unvaccinated; and it is only upon the visitation of an epidemic that our culpable negligence becomes fully revealed. It is true that the mere passing through our crowded streets, and observing the great rarity with which persons disfigured with the small-pox are met with, compared with heretofore, affords a rough but satisfactory proof of how much has already been accomplished: but the almost entire immunity which our naval and military services enjoy from a scourge which formerly ravaged them so fearfully, exhibits how much more yet may be done by adopting additional precautions, the necessity for which the returns of all the local registrars testify to, by their numerous entries of deaths of unvaccinated children.

No one, however, is now sanguine enough to believe that small-pox, to whatever extent it may be kept under, and its severity mitigated, by diligent and *universal* vaccination, will ever cease to be one of the occasional afflictions of the human race. But this affords us not the shadow of an excuse for neglect and remissness in the application to the greatest possible extent of the only means which approaches to the character of a preventive. The history of Vaccination in Sweden, in this point of view, is interesting. Dr. Retzius states* that, during the two first years of the present century, the kingdom of Sweden lost 18,089 inhabitants by the small-pox, and 6057 were annually swept away upon an average during the 18th century; but after the introduction of vaccination, in 1803, this mortality gradually diminished; so that while during the preceding half-century 15 per cent. of the children were carried off by small-pox, and of every 11 deaths 1 occurred from this disease, in 1804–5, 1 child only out of 44 born, died of the disease, and in every 40 deaths 1 only was caused by small-pox. By 1810, in many portions of the country, full one half the population were vaccinated, but small-pox prevailed in force every now and then, being especially propagated by mendicants and gypsies, and unqualified vaccinators. In 1813 the disease had made great head, and the popular opinion received a great shock in consequence of several of the vaccinated acquiring it. In 1816 a royal ordinance imposed a fine upon all persons neglecting to have their children vaccinated within the two first years of their lives, and restricted the performance of the operation to qualified persons. All persons, too, who had neither had the small-pox nor had been inoculated, were compelled under fine to be vaccinated within a certain period. The mortality from small-pox for the years 1819–23 only amounted to 0·0017 of the entire mortality. At the end of 1823, however, the small-pox, imported into the ports by some sailors, spread fearfully in the interior and affected fatally numbers who had been vaccinated,

* Gazette Medicale, 1843, No. 63.

inoculated, or had had the disease naturally. Of about 85,000 persons attacked, there died in 1824, 0·73 per cent.; in 1825, 1·34; in 1826, 6·735, and 1827, 0·7 per cent. But even this mortality is nothing in comparison with that resulting from the old epidemics; when 42 out of every 1000 inhabitants annually died of the disease, and 14 per cent. of the cases were fatal. During the years 1824–37 there died but 243 per annum of small-pox. In 1838 another epidemic, which also so severely preyed on other parts of Europe, again appeared, and in 1838–40 there were 54,870 persons attacked, of whom 4,389, *i. e.*, 7·91 per cent. died—the disease affecting both those who had been vaccinated, and those who had had the disease naturally in childhood. From this period there have not been more than 250 cases per annum. Diligent Vaccination then would seem to have the power of maintaining a low average mortality, but not of completely protecting against occasional epidemics.

The diminution of mortality from Small-pox which occurred in *London* and its suburbs a year or two after the adoption of the provisions of the Vaccination Act in 1840, has been, by a visitation of the epidemic of last year, replaced by an augmentation. The numbers for the years 1838–44 were as follow:—

| | 1838 | 1839 | 1840 | 1841 | 1842 | 1843 | 1844 |
|---|---|---|---|---|---|---|---|
| Small-pox . . . | 3817 | 634 | 1235 | 1053 | 360 | 438 | 1804 |
| Measles . . . | 588 | 2036 | 1132 | 973 | 1293 | 1442 | 1182 |
| Scarlatina . . . | 1524 | 2499 | 1954 | 663 | 1224 | 1867 | 3029 |
| Pertussis . . . | 2083 | 1161 | 1069 | 2278 | 1603 | 1908 | 1292 |

The deaths from Small-pox during the two first quarters of 1845 amounted to 727. We have placed in the above table the number of deaths caused by the three other most destructive diseases of children, from which it appears that Small-pox stands even yet third on the list; the totals of the seven years being as follow:—Scarlatina, 12,760; Pertussis, 11,394; Small-pox, 9,341; Measles, 8,646. The synopsis is interesting too in reference to the alleged greater predominance of these other forms of disease in those years when Small-pox carries off fewest victims.

Although many of the generalizations of the sagacious Jenner have been confirmed by subsequent experience and observation, the most important one, that vaccination is as perfect a protection against small-pox as small-pox itself, unfortunately must now be abandoned; for, although Dr. Baron, and a few other eminent practitioners in this country and in France, still maintain this opinion, an extensive examination of facts will certainly not confirm it. The authority of Jenner and the immunity of the early vaccinated, long indisposed professional men to the admission of cases of small-pox after vaccination, upon other grounds than idiosyncrasy or imperfect vaccination; although Drs. Copland and Brown, from contemplating several of these, predicted at an early period, that the protective power of vaccination would not prove permanent, Even now, it is the growing sense of insecurity which occupies the public mind that has forced the matter upon professional attention, and has extorted the acknowledgment of the necessity of stating the extent of immunity to be expected from vaccination with far greater circumspection than heretofore. The

natural anxiety of the educated portion of the community has been much excited of late upon the subject, and the statistics of all recent epidemics show with what justice. Thus in thirty of these occurring in France, between 1816 and 1841, 5963 of the subjects of small-pox had been vaccinated. In an epidemic at Marseilles, 478 in 864 cases are said to have undergone vaccination. Of the 647 patients admitted into the London Small-pox Hospital in 1844, 312 had been vaccinated and presented genuine cicatrices, and 22 were said also to have been vaccinated, but did not present proper cicatrices.

Forced to admit that the original hopes excited by vaccination were too sanguine, their disappointment has been explained by observers in different modes. Thus, it has been said the vaccine virus may have degenerated in the course of its long-protracted employment. But this is a figment adopted by few, for the physical appearances and course of the disease engendered by it are precisely the same as in the time of Jenner; and it is those persons who were long ago vaccinated with virus, which according to this hypothesis should be possessed of greater efficacy, who are the subjects of small-pox, while those who have been operated upon recently are exempt. Then, again, we think far too much stress has been laid upon the faulty mode of conducting the operation as an explanation of the facility with which small-pox is subsequently contracted. In the immense majority of cases, where the vaccination succeeds at all, it pursues its course with regularity and is followed by the characteristic cicatrix; and there is not a semblance of proof that patients in whom some trifling difference in the local appearances, especially as regards the dates of the various changes, have occurred, are those whom small-pox especially affects. It is quite consistent with all analogy of other diseases that such differences should be much more striking; and we think the Provincial Medical Association, in their report on vaccination, have laid far too much stress upon these circumstances. Let it be remembered, too, that patients vaccinated by Jenner himself, and under his superintendence, have yet contracted small-pox.

If we are to believe the statements of the officers of Vaccine Institutions, the operation requires a dexterity, and the superintending its effects a sagacity, far beyond the competency of the surgeon qualified for the ordinary emergencies of his profession. We are no advocates for intrusting the diffusion of vaccination to ignorant and incompetent persons; but we must guard against this tendency always shown by persons engaged in special occupations to exaggerate their difficulty and importance.

In the Report of the "Royal Jennerian and London Vaccine Institution," for 1845, we find the following elegant *morceau* from the pen, we presume, of its "Medical Director," Dr. Epps. After stating that they had vaccinated 6717 during the last year—truly a drop in the ocean in a metropolis with its two million souls—he proceeds—

"This increase establishes the high and increasing estimation, in which this Institution is held by the public; an estimation founded primarily upon the success attendant upon the vaccination performed at the Stations of the Institution; founded in part, it is to be feared, on the imperfection of the vaccinations performed by many surgeons, who practise vaccination, and consequent upon this, the spread of small-pox. Your Board of Managers have no wish to represent

as incapable the majority of practitioners who vaccinate; but, having declared formerly their opinion that the Vaccination Act would be likely, by inducing surgeons unacquainted with vaccination to vaccinate, and thence likely to vaccinate inefficiently, to create by their vaccination a spurious confidence on the part of the vaccinated, that they are safe because vaccinated, when in reality they have not been vaccinated at all, and having found that small-pox has dreadfully increased (!) since the Act has come into force, they feel bound to refer to this explanatory fact; to enter their protest against the presumed inefficacy of vaccination, and to throw the want of protection upon the proper source of such want, namely, the ignorance of many practitioners who vaccinate, of proper vaccination. * * * The Board of Managers feel less hesitation in dwelling on this cause of the spread of small-pox because they know that there are numerous surgeons who do vaccinate properly (a list of such as belong to the Institution is furnished accordingly,) and further, that genuine vaccine is to be obtained at the Royal Jennerian and London Vaccine Institution, and therefore it is the fault of medical men, if spurious vaccination exists; or, if existing, is not recognised and declared as such."

Dr. Gregory, a far higher authority, and a respecter at least of the Queen's English, even observes:—

"These cases further impress me with the great importance of restricting the number of those to whom the parochial system of vaccination (enjoined by the Vaccination Extension Act) is entrusted. I speak after 22 years' experience in the practice of vaccination: and I know that the choice of effective lymph requires much tact and discrimination, and that, except at Vaccine Stations, where considerable numbers congregate, such choice cannot be had, nor such knowledge acquired."

The explanation now adopted by most observers, save such as still believe Jenner infallible in his predictions, is probably the true one; viz., that the duration of the protection by vaccination is limited, the constitution re-acquiring its susceptibility for the small-pox after the lapse of a certain period of time.

To remedy the admitted imperfections of vaccination some consider that a more careful attention to its process will prove sufficient, which, however, is an opinion rapidly losing ground. Others believe that, by again having recourse to the cow, we shall acquire a more efficient virus. This suggestion has brought to light the fact that the genuine disease is itself of rare occurrence in this animal, and liable to be confounded with spurious, non-protecting, or even, as occurred in Bengal, infecting eruptions. M. Bousquet states that no genuine case of pock in the cow was observed in France prior to 1837. However, new supplies have now been obtained by Mr. Estlin at Bristol, at Passy near Paris, and elsewhere; and the local effects produced by the new virus have, in some cases, been more marked, but in others no-wise greater than those produced by the old vaccine. M. Fiard, speaking of the experiments at Paris, states that the greater activity at first manifested disappeared after a few years employment of the new virus.

Some practitioners regret that medical practitioners should not have been excepted from the operation of the clause of the Vaccination Act which renders *Inoculation* for the small-pox penal. Dr. Gregory, reasoning from the facts brought before him at the Small-pox Hospital (the experience of which institution he has in the most praiseworthy and inde-

fatigable manner from time to time brought under the notice of the profession,) recommends a practice in the propriety of which we cannot concur. In the year 1844, 647 patients were admitted, being a greater number than any year, except 1838, has furnished since the introduction of vaccination. Of these 647 persons, 312 had satisfactory vaccine cicatrices. The proportion of cases of small-pox after vaccination has been steadily increasing in the hospital from 1809, when it was 1 in 36, to 1844, when it was 1 in 2. Although 100 of the 312 had the mild varioloid disease, there were 24 of the remaining cases which died :—giving a mortality of 8 per cent. while the mortality after inoculation is but $\frac{1}{2}$, *i. e.*, 1 in 500. Dr. Gregory therefore considers that the best course that could be pursued would be to inoculate as they approached puberty those persons who had been vaccinated in infancy.

In reply to this we may observe—1. That the absolute increase of small-pox in the community at large cannot be judged of by the limited experience of the London Small-pox Hospital, unless we are put in possession of the comparative increase of the population of the districts whence it is supplied with patients. 2. That the very extension of vaccination itself explains why the proportion of admissions of small-pox after vaccination is upon the increase ; and we hope the time may come when none other will present themselves for admission. The truly important question is not what proportion do these bear to the admissions for the natural disease, but to the number of persons who have been vaccinated—a question the solution of which is not at present possible. 3. That this mortality of the vaccinated, derived as it is from the observation of patients taken from the lowest classes of society, exposed to every adverse hygienic circumstance, is far too high as applied to small-pox after vaccination in general. We have no statistical returns elucidatory of this question ; and Dr. Gregory's statement, in his letter to the Registrar-General, "The mortality by small-pox, as it occurs among the vaccinated, is 10 per cent." is derived solely from data furnished by the Small-pox Hospital. According to the French Report, presently to be noticed, the mortality is slight. Thus, in 5963 cases of small-pox after vaccination, occurring in France in 1816—41, there were but 62 deaths ; and of 2000 occurring in the violent Marseilles epidemic of 1828, only 45 died. At the Hospital La Pitié however, during the epidemic of 1825, the mortality was far greater. Of 682 admissions there were 162 persons who had been vaccinated, 88 in whom the success of vaccination was doubtful, and 432 who had not been vaccinated. There died 25 of the vaccinated and 148 of the non-vaccinated. Among the non-vaccinated were 14 instances of secondary small-pox, two of which only died. 4. The plan of inoculation, however beneficial to the individuals operated upon, would prove a very destructive one to the community. Again, in spite of whatever care might be taken, should we find centres of infection multiplying on every side, and thus should become engaged in the not very wise proceeding of undoing with one hand what we were doing with the other.

The only unexceptionable procedure would be the general adoption of the practice of *Re-vaccination*. Every medical man must be aware that the question of the propriety or necessity of this practice has excited much attention of late among the better-educated portion of the public, although its investi-

gation has been unaccountably neglected by the profession in this country. To us there seems everything in favour of its adoption, and no one valid objection to urge against it. It has been said indeed that such adoption would unsettle the public mind in its faith in vaccination. Nor need this be regretted. The most fatal condition of the public mind, that which is really to be dreaded, and from which so much evil has already sprung, is *apathy*. Let public attention be fairly aroused, the merits of vaccination will then undergo renewed discussion and examination, and its more general adoption, even with an understanding of its limited protective power, must be the result. It is to the continental states, especially Prussia and Wurtemburg, that we are indebted for carrying on the experiment of re-vaccination upon a large scale, the results of which have been frequently detailed in the pages of this Journal.* In the former country, of 216,289 re-vaccinations during 1833-7, there were 84,516 successful; and of 44,000 in the latter country, 20,000 succeeded. Frequently, too, cases which failed on a first trial succeeded on a subsequent one. The precise proportion of successful cases has varied from 31 to 45 or 46 per cent.—the period between the ages of 10 and 30 being found that most certain of success. Of course, no one infers that the success of re-vaccination implies a liability to small-pox in an equal number of cases. The operation, in fact, in the hands of Heim, proved successful also in 32 per cent. of persons who had already had the small-pox—a proportion infinitely greater than that in which small-pox occurs a second time. But, although we are unable to state the exact proportion of the vaccinated persons, in whom re-vaccination succeeded at the rate of 34 per cent., who would otherwise have acquired small-pox on exposure, yet experience has shown this might have been considerable; whereas, among the many thousands who have undergone re-vaccination in Prussia and Wurtemburg, an example of the occurrence of small-pox has only here and there been observed. Moreover, in the case of an epidemic breaking out, it has been found, in various localities, that immediate re-vaccination has *arrested its course*—individuals in whom the operation proved successful and those in whom it failed equally resisting the disease.

The French *Academie des Sciences* proposed prizes in 1842, for the best memoirs upon the present state of the vaccination question. On account of the great number (35) and size of the essays, the decision of the Commission deputed to examine them has been delayed until the present year. The Report prepared by M. Serres is a highly interesting document, and observers so well known as MM. Bousquet and Fiard are found among the successful competitors. Our last Periscope contained the conclusions, which the Commission, composed of MM. Magendie, Breschet, Dumeril, Roux and Serres, agreed upon; but the importance of the document demands of us a somewhat farther notice here.

The 1st question is couched as follows: "*Is the preservative virtue of the vaccine virus absolute or only temporary? In this latter case, determine by precise experiments and authentic facts the period during which vaccination preserves from variola.*" The following are the replies to the queries,

* See especially Vols. 30, 31, 34.

preceded by a few interesting observations upon the *varioloid*, by M. Serres.

"This mitigating power is confirmed by the experience of every physician, who since the researches of Dr. Thompson of Edinburgh, published in 1818-20, have recognized in the varioloid of the vaccinated, natural variola, deprived most frequently, by the vaccine, of the grave characters which render it so dangerous. By reason, however, of the importance, and to a certain point the novelty, of this acknowledged property of vaccinia, your Commission has deemed it useful to support by its own experience a fact which the public is ignorant of, and one which it is so necessary for it to become acquainted with. It has deemed it important to disengage this property from the vague expressions by which it has been designated, as, *modified*, *mitigated*, *shorter*, *benign*, *variola*, *&c.*, and replace them by less equivocal characters, which allow of the determination in what and how vaccination modifies natural small-pox in so advantageous a manner.

"If we except the intermitting fevers there is no disease which progresses with more regularity than natural small-pox. The four periods which constitute it—the fever of incubation, the eruption, the suppuration, and the desiccation—succeed each other with an order and regularity that nothing can derange, not even complications, not even intercurrent diseases which modify their nature. What these cannot do vaccination effects. Its result is to arrest the periods of the disease and cut it short: so that when it does not retain its preservative power against the inroads of the disease, it yet preserves it in its various periods. Thus when the varioloid papulæ appear in the vaccinated they do not suppurate. This is the simplest case of varioloid. At other times, suppuration in part commences but is suddenly suspended. Again, the suppuration may follow its course and abortion of the desiccation occur. It is remarkable that the abortion of the pustules is constantly followed by the arrest of their corresponding symptoms. It is on this account that the variola of the vaccinated is so little severe. This arrest of the development of the pustules modifies much their characters. Some have distinguished 5 and others 14 species of varioloid, and these might be yet farther multiplied, but uselessly so; for it is only the periods which they traverse, which offer any interest in the terminations of the variola in the vaccinated.

"The comparison of results enables us to draw three conclusions. 1. That the preservative power of vaccination is absolute and general for the eight and nine first years after its performance, and even to the 10th or 12th year, according to the experience of re-vaccinators. 2. When this age is passed, and especially under the influence of epidemics, a part of the vaccinated, but a part only, are liable to contract variola. 3. The greater number of the vaccinated are probably protected for life."

The *Second Question* is, "*Has the Cow-pox a more certain or permanent preservative power than virus already employed during a greater or less number of successive vaccinations?* The concurrent testimony of numerous observers proves that the local effects of the new virus are more marked; but it by no means follows that the preservative power is proportionate to the intensity of these. The vaccinations made with the new virus are of too recent a date to admit of any fair comparison being made.

"We may terminate this part of the question by citing two facts which prove the energy of the virus at a period when it was supposed to be enfeebled by reason of the diminution of the intensity of its local phenomena. 1. Small-pox appearing in the College at Sorèze attacked 40 pupils, of whom two only had not been vaccinated. Dr. Millon re-vaccinated all the others to the number of 300, when the contagion became suddenly arrested. 2. Small-pox, which prevailed at Mantua in 1831, penetrated into the Foundling Hospital, and 12 were

attacked. Dr. Solera re-vaccinated the other 200 children and the disease disappeared."

We may observe, however, that these facts, occurring only in children, are not quite so conclusive as at first sight they would appear to be.

*Third Question.—Supposing the preservative power of the vaccine becomes enfeebled by time, should we renew it, and by what means?* Observation has proved that, not only the original but the recently-obtained virus fails to produce after a time the intense local effects which it did at first: so that if these are to be maintained, it is necessary to provide means for its renewal. Three means have been proposed. 1. To inoculate the cow with the grease of the horse or with human variola. To restore its native strength to the vaccine virus by returning it to the cow from man. 3. To retake the vaccine at its source. The inoculation of the cow with the matter of grease, although frequently unsuccessful, has at other times succeeded, and deserves farther trial. The same may be observed of the inoculation of this animal with human variola. (No notice is taken of Mr. Ceeley's successful experiments.) The employment of virus obtained from vaccinating the cow, has been stated by some as more successful in the proportion of 1 to 3, while others represent it as having produced no improvement. Might not satisfactory results be produced by first vaccinating the cow from man and then transmitting it through many successive cows? However, the Reporter adds, the means which is of all others to be preferred is that recommended by Jenner, viz., seeking a fresh supply from the cow.

"It seems to this Commission, that it will prove very useful to endeavour to propagate the natural cow-pock. To this end it believes it necessary to suggest to observers who may find it anew not to content themselves, as has hitherto been the case, with transmitting it to man, but also to endeavour to transmit it to other cows, and to collect it for preservation and diffusion, so that the vaccine may be renewed as often as possible. It equally recommends observers to describe carefully those eruptions of the cow, which by their characters resemble cow-pox, to expose the differential marks, so that it may be easily recognized, and that certainty given to this point of comparative medicine which its importance deserves."

### *Fourth Question.*

"*Is it necessary to vaccinate the same person several times? and, if so, after how many years should we have recourse to these new vaccinations?* The examination of facts leads to the conclusion, that vaccination does not always preserve from small-pox; but that the enfeeblement of its local phenomena does not diminish in the same proportion its preservative power. Thus, in augmenting this local intensity by the renewal of the virus we may hope for the conservation of its properties but not for their increase. Those vaccinated by the renewed virus will remain as the others liable to attacks of variola. Such attacks bear relation then not to the quality of the virus but to the age of its insertion, so that man is almost absolutely preserved until adolescence. After that period certain of the vaccinated are liable to attacks of variola until 30 or 35 years of age, after which period their preservation is absolute and almost certain.

* * * * * * * *

Neither the intensity of the local or general symptoms, the multiplicity of the punctures or cicatrices, nor the appearance of these latter, upon which, upon

the theory of Gregory, such great hopes had been founded, have furnished any certain index for the foundation of a prognostic."

*Re-vaccination* is the only means we have of distinguishing those of the vaccinated who are definitively protected from those who are so but temporarily, in whom the preservative power is enfeebled. The immense success attending this practice in Germany, led to repeated discussions in the French Academy of Medicine, the members of which had not their confidence in vaccination destroyed by these assemblages of figures, especially until their true value could be enquired into. The very different results obtained in different countries are remarkable; for while at Petersburgh the successful re-vaccinations only amounted to 3 per cent., and in Paris to 10, or with the new virus 20 per cent., they reached to 50 per cent. in Prussia, and in some parts of Wurtemburg to even 70 per cent.! So too, even in Wurtemburg, while some portions of the country furnished this 70, others furnished 29 only, and the army but 34. The reporter believes that a great number of these cases have been set down as successful re-vaccinations which would not be so considered in France.

The last subject to be noticed is the *degree of liability the re-vaccinated possess of contracting small-pox.* Jenner made an observation which should not be neglected by re-vaccinators—that, although cow-pox or vaccination protects against the small-pox, and variola against the cow-pox, yet cow-pox is not always enabled to afford protection *against itself:* so that, in some individuals, the visible phenomena of vaccination may be reproduced several times. Re-vaccination has therefore not the important signification stated to belong to it by some; it is not a *variolometer*, and thousands of vaccinated persons, after having been exposed to the contagion of small-pox without acquiring the disease, yet may be vaccinated a second time with success. Moreover, persons have been extensively re-vaccinated who have had the small-pox.

These facts raised at first much opposition to re-vaccination, until the experience of its *power in arresting epidemics* overcame the arguments of all objectors in the north of Europe. The Commission, observing that small-pox has been endemic for the last twenty years in Paris, and believing re-vaccination to be, after a first vaccination, the only efficacious means that remains, urges its adoption in France. All observers who have extensively resorted to its employment are unanimous in acknowledging its benefits and recommending its extension; and the same approval is bestowed upon it by the whole of the competitors for the prizes.

Dr. Stewart's interesting work is divided into three parts. One of these treats of recent Epidemics of Small-pox in Calcutta, the second of an Epizootic Disease prevailing among the cows in the same city, and the third upon the History, State, and Prospects of Vaccination in Bengal. We will briefly advert to each of these.

1. *Small-pox in Calcutta.*—Dr. Stewart observes, that although cutaneous diseases are those which most prevail and prove most troublesome among the Native population of India, they have attracted little of the attention of the authors of diseases of that country.

"The oversight has been doubtless owing in some degree to the partial inter-

course which English Physicians have with the lower orders of the people. With few exceptions the professional duties and avocations of Medical Officers in India bring them into acquaintance only with the native sick in Regimental, or in Gaol Hospitals. In Calcutta, a few practitioners have access to the houses and families of some of the upper classes of the wealthy Hindoos; and a smaller number still, in charge of Dispensaries, have opportunities of becoming familiar with the prevalent diseases of the *poor*. But these charities afford even to the most zealous and assiduous lover of his profession a very partial idea of the acute diseases of the country; for, except in cases of accident or of cholera, no in-door patients are received into these institutions; and of the hundreds who apply for advice and medicine daily, *all* are too poor to afford the hire of conveyance thither often or regularly; besides, in dangerous illnesses, few of course could bear this. Hence also in a great measure it happens, that among many thousand patients who have applied for and received advice and medicine at the various Calcutta Dispensaries since 1st Jan. to 1st of July, *not one single case of small-pox* has been seen, while the streets have been crowded every day with funeral processions, and the smoke of funeral piles on the banks of the river has tainted the morning gale for months past."

Although small-pox itself is not seen in the patients attending at the Dispensaries, cases exhibiting all its horrible sequelæ present themselves in abundance. Of 280 patients presenting themselves daily at the Park-street Dispensary, 12 on an average, chiefly children, attend on account of these!

The last epidemic of 1843-4, first commenced in November, during which month the Hindoo ghat registers reported 14 deaths from this cause. These augmented in Dec. to 58, in Jan. to 157, in Feb. to 455, in March to 963: and several Europeans having also fallen victims to the disease, a general panic prevailed. Small local hospitals for the admission of patients were established in different parts of the town, additional vaccinators employed, and advertisements inserted in the newspapers offering rewards to those parents who presented children bearing perfect vaccine crusts.

"But the Hospitals remained nearly tenantless, and, after six weeks' fruitless trial, were closed. The grievous want of success which attended these liberal, well-intentioned, and well-devised, but tardy measures for the benefit of the suffering poor deserves more than a passing notice. The causes of it are, I fear, not of local or of recent origin, nor confined to Calcutta, but are prevalent all over Bengal. Enslaved by the trammels of a degrading religion, by which their thoughts are chained, their reasoning faculties hood-winked, and their natural affections thwarted, all offers of even the most simple, obvious, and unquestionable temporal advantage to the recipient, and of undeniable and acknowledged liberality and good will on the part of the bestower, if involving the slightest deviation from ancient usage, are received by the Bengallee, not with the modest and thankful accord of silent gratitude, but with timid and suspicious, more than Trojan horror, perchance with the apathetic declaration of entire submission to the decrees of fate. If accepted at all, it is with the unblushing demand for pecuniary reward, for compliance with 'master's orders,' or 'master's pleasure,' or with the fawning and false semblance of a pleased acquiescence."

The number of admissions only amounted to 69, being the lowest outcasts of society, of whom 32 died. Happily, however, the epidemic soon afterwards declined.

The population of Calcutta is of an extraordinary kind, inasmuch as it is *stationary*. A careful census in 1837 stated the entire population of all creeds, castes and countries at 229,714, while a somewhat *less* number was found by a census of 1843. A stranger is struck by the paucity of children and old men found in the streets and at the doors; but this, as well as the stationary character of the population, is explained by the fact, that the majority of Hindoo labourers, estimated by Dr. Stewart at 175,000, dwell six or seven miles from the town, crossing or crowding the river Hooghly on their way to Calcutta in the morning and returning thence at night. Even of the dwellers in the town the greater numbers have left their families in the country, while they resort to the capital temporarily in search of profitable occupation, as the Irish do with us. The registered births amounted in 1838 to but 2,781. During the 12 years 1832-43 the mortality was 11,045 per annum, or 5·11 per cent.—the mortality in infancy and above 60 being less in Calcutta than in England; but that between 6 and 60 being enormously greater. The total mortality of natives from small pox in the 12 years amounted to 5625, giving an annual average of 468, the lowest year (1836) yielding but 16 deaths, the highest (1833) 2548.

*Effects of Season.*—After quoting some meteorological tables, Dr. Stewart observes that, in the course of the three Calcutta epidemics, a remarkable similarity as to the effect of season prevailed. Thus the disease progressed in the course of the winter and spring, and became checked as the rainy season commenced, entirely disappearing when this became established. The rainy season is equally adverse to the success of vaccination, and to the only other exanthemata of the country, measles and varicella. Pertussis is the epidemic of the rainy season, Remittent Fever of the autumn, while Cholera is always prevalent at change of season, especially at the setting-in of the cold weather. Dr. Stewart observes that the peculiar condition of the atmosphere which determines the type and malignancy of the epidemic of small pox, exerts a considerable effect upon that of the epidemic which succeeds or replaces it. As the small pox declined in May 1844, a malignant and fatal form of cholera set in, and the same has been observed in other epidemics.

*Native Treatment.*—This is cooling, starving, and expectant, more reliance being placed upon propitiating the presiding Goddess of Small-pox, *Sietula*, by incantations and offerings, than upon mundane operations. Ptisans and decoctions are given; the maturation of the pustules is encouraged by thin linseed poultices, and, when the pocks are ripe, they are punctured.

*Conclusions.*—From his own observations and those of others who have better opportunities of observing the disease among natives than he has had, Dr. Stewart concludes:—

"1. All classes and castes of natives, all ages and both sexes, are pretty equally susceptible of infection, the mortality being mainly dependent upon the modifying circumstances of previous inoculation or vaccination, of natural

constitution, of present health or feebleness, of personal comfort or destitution affecting individuals; and by the particular constitution of the atmosphere, the salubrity of the locality, and the construction of the dwelling. 2. The great majority of the victims are totally unprotected either by vaccination or previous inoculation, though the latter practice is most common. 3. Those who have undergone the disease previously, either naturally or communicated by inoculation, or who have been *successfully* vaccinated, always have the disease in a somewhat *modified* form. The incursive fever is often equally violent, but the eruptive stage is always milder, and the secondary fever proves fatal only in previously debilitated or scrofulous subjects. 4. In those who suffered from high fever at the onset, with much cerebral and venous excitement, head-ache, delirium, and severe lumbar pain, unless early destroyed by fever, the eruptive stage succeeds most fully and favourably, affording, though in a confluent form, great relief to the sufferings, and promise of a favourable termination. In these cases the chief danger arises about the 12th or 14th day from the secondary fever then occasioned by the erythematous condition of the skin. 5. The worst and most certainly fatal cases are those of asthenic type occurring generally in miserable, impoverished and debilitated subjects, or in lethargic, obese and scrofulous constitutions, in which early passive hæmorrhages, the result of venous congestion, occur from the mucous surfaces of the bladder and bowels, or from the uterus in women, in which the maturative process is imperfect, and petechiæ or bloody vibices soon cover the skin, death ensuing about the eighth day from anemia, while the sensibilities are fully retained to the last moment. The violence of the epidemic is moderated by a damp and hot atmosphere, its diffusion promoted by dry and cold weather."

The Europeans and East Indians suffer very slightly from the disease when compared with the natives; but most of the subjects of it had been vaccinated. An interesting case of the co-existence and simultaneous progress of variola and vaccinia, and another of petechial small-pox, are related.

2. *The Disease among Cows.*—We must dwell upon this section very briefly. Great numbers of these animals suffered from a fatal disease, termed by the natives "Mattah" or inward small-pox, during the raging of the small-pox epidemic. None inspected by Dr. Stewart had any pustular eruption. He has likewise quite failed during many efforts at repeating Mr. Ceely's experiments of inoculating the cow. So, too, among many hundreds of cows inspected, he has only been able in three instances to discover any thing like papulæ, vesicles, or pustules on the teats or udders of the animal—and in these could not communicate the virus to children. No medical or veterinarian professor in Calcutta had seen the cow-pox among cows in England. From the 1st Sept. 1843, to 1st June 1844, there were reported to have died 2233 head of cattle of "Mattah:" and as the native butchers were said to kill for sale all animals they suspected of having taken the disease, the fear of eating infected meat induced the European and East Indian population to abstain from beef with all the rigour of the Hindoos themselves. The poultry also died by hundreds at this time. A report by Dr. Hosack of a choleroid disease which prevailed in New York in 1842, caused by eating smoke-dried beef, prepared from diseased animals, is referred to; and some of the meat offered for sale at a low price to the lower orders in Calcutta is described as diseased and unfit for food, while the slaughter-houses were kept in a disgraceful condition. A

great desire is expressed that Calcutta should be supplied with properly constructed and inspected *abattoirs*, as at Paris and New York. We sincerely hope that no corporation vested interest will oppose there, as they do here, this improvement.

*Vaccination in Bengal.*—When, as we have seen in a former part of this article, that even in England, and scarcely in any country of Europe, has vaccination had free scope given it to do its goodly work, we can feel no surprise that its success has been still less in India. The climate, the religious prejudices and diversified character of its inhabitants, their practice of inoculation, and their imperfect intercourse with Europeans, alike tend to this end. The vaccine virus, after numerous disappointments, succeeded at last in India; and Dr. Shoolbred in his Report, stated that 8140 subjects were vaccinated in Bengal in 1804. Still, at several of the Stations, the supply soon became lost, and its recovery was a matter of great difficulty, until Dr. Shoolbred employed the *dried scabs* as the mode of conveying it, as recommended by Mr. Bryce. These proved nearly as potent as the recent lymph itself.* Dr. Cameron's Report, published in 1831, proved that vaccination was progressing, although slowly, and denied the existence of any cases of variola supervening after its proper performance.

In 1832, Mr. M'Pherson discovered the genuine cow-pock among some cattle at Moorshebad. A virus of apparently superior power was thus obtained and freely distributed. In 1836, Messrs. Brown and Furnell believed they had discovered the genuine cow-pock in Assam, and several children were successfully vaccinated; but unfortunately from the lymph obtained from some of these a form of small-pox was communicated. The vaccine virus loses much of its power in Bengal upon the approach of the rainy season, recovering it as the cold weather returns. Dr. Stewart replaced the old 1802 virus by some newly received from England in Sept. 1839, and which proved very satisfactory in its effects. All his correspondents agree in considering it as superior to that before in use.

*Re-vaccination.*—Among the European society there have occurred not a few cases this year of modified small-pox, in persons of adult age, who had been vaccinated in England in early life, and very many persons have been re-vaccinated with complete success. Of 87 natives, however, re-vaccinated by the author, only five were successful.

*Present State of Vaccination in Bengal.*—Tables are given shewing the progress of vaccination in Bengal, from 1827 to 1843 inclusive. The total number vaccinated amounted to about 652,000, the greatest number,

* The utility of these crusts is repeatedly alluded to in the course of the book, and the author observes, in relation to the failure of his early employment of them—"I received a hint, however, from my friend Mr. Martin (along with two very fine crusts taken from his own child in London and inclosed in his letter,) which was—to levigate the crusts finely and *dilute them largely*, using about eight or ten drops of water at least to each *after* reducing them to pulp. I found that, in this way, I succeeded perfectly in every case."

68,680, occurring in 1843. The author states his conviction that the practice is making way with the natives; although some of their inoculators are propagating the disease by inoculating for the small-pox at the rate of 600 per annum each. Still the number above mentioned, considering the enormous population in Bengal, must be considered pitifully small. Considerable sums of money have been expended in endeavouring to propagate the blessing: and much of the author's work is taken up with criticising the present mode of rendering governmental assistance, and suggesting improvements, which, from the local character of the knowledge required to appreciate them, cannot interest our readers.

"Reviewing the whole history of Vaccination in Bengal, I fear it must be owned that its progress has been slow, that its operations have been but partially successful, and that its present state and prospects are unsatisfactory and discouraging. Neither can it be denied that public opinion has been unsettled regarding its advantages, and public confidence shaken in its efficacy and permanence as an antidote to small-pox—a feeling which is not confined to the common people, but prevails more perceptibly among the better-informed and reflecting classes of the community, and is not without participators among the profession itself."

The reports of the Superintending Surgeons in the different Divisions of the Presidency unite in stating that the numbers vaccinated are quite disproportionate to the expense incurred. The vested interests of the priesthood, to whom inoculation is a profitable monopoly, and the ignorance, and apathy of the natives, are alike unfavourable to progress. Inducing the Brahmins to substitute the practice of vaccination as a source of emolument has however been several times successfully resorted to.

According to a long anonymous account quoted with approbation from the Lancet of 1834, it would seem that vaccination had been much more systematically and successfully pursued in the *Bombay Presidency*. Native vaccinators were employed under the superintendence of well-paid travelling English superintendents. An ill-judged economy has, however, of late much diminished the salaries of the latter.

According to a report forwarded from the *Madras Medical Board*, vaccination is also in a much more thriving condition in that than in the Bengal Presidency, above two million persons having been vaccinated in the ten years, 1831–40. This extensive system of operations was carried out by 162 native vaccinators, under the supervision of 33 superintending surgeons. The natives in this part of India are said not to be prejudiced against vaccination, believing it of a similar nature to the inoculation they had always been accustomed to—the chief obstacle arising from their apathy. Dr. Stewart, in commenting upon the differences observed in the two presidencies, attributes them to—1. The greater prejudices of the Bengallee. 2. The assistance derived by the vaccinators from the Madras Revenue Officers. 3. The climate of Bengal being unfavourable for the preservation of the virus, which is only transmissible in cool weather. 4. It is only in large towns, as Calcutta, where a sufficiently large and mixed population can secure sufficient subjects for transmission, and where the force of example can discourage inoculation. 5. The returns of the native vaccinators are by no means to be implicitly relied on. Dr. S. suggests that operations in Bengal should be confined to large towns; and

that the practice of vaccination should be recommended to the notice of natives by *permanently associating it with that of Medicine*, performing it publicly at hospitals and dispensaries, under the personal superintendence of the surgeons, and offering a small reward for the preservation of the crusts.

To revert for a moment to our own country, we may, in conclusion, express our opinion—

1st. That, although the Vaccination Extension Act is a step in the right direction, no permanent good can result until *vaccination is rendered compulsory*. Even now the Tables of Mortality teem with accounts of children snatched away by small-pox, having been cruelly denied the benefits of protection; and in the first Quarterly Table for this year we find the following pertinent remarks in reference to Norwich and Ashton.

"Few of the victims of small-pox had been vaccinated; and thus in one city between 200 and 300 persons were suffered to perish in three months—others were maimed, blinded, and deformed for life—through negligence of the parents in the application of the protection discovered by Jenner, and placed at the disposal of all by the Legislature. Other examples of the consequences of neglecting vaccination will be found in the notes. Ashton-under-Lyne is the only parish in which it is mentioned that the churchwardens and overseers have refused to carry out the provisions of 3 & 4 Vict., to extend the practice of vaccination, by contracting with medical officers for the gratuitous protection of the poor. Sixty-one funerals took place in Ashton from small-pox. In Jenner's life, an instance is mentioned of the cost of coffins convincing the overseers of a certain parish of the advantages of vaccination, after all the higher arguments of humanity and justice had failed."

We must confess we can see no objection to rendering this practice a *compulsory* one, and do in no wise agree with those who would allow persons ignorant or forgetful of their duties and responsibilities to risk the lives and health of their helpless offspring, and perpetuate a dangerous disease by their carelessness and obstinacy. The fear of the ravages of an occasionally occurring pestilence, such as the cholera or plague, is deemed a sufficient reason for placing considerable restrictions on private right of action, and even upon personal liberty; and yet a disease far more deadly, because more abiding, and about the contagion of which there is no dispute, is not to be effectually met by a prophylactic which all are unanimous in praising! And this, too, not from fear of wounding any prejudices opposed to the practice which can scarcely be said to exist; but from an exaggerated dread of invading the right of private judgment, which would be all very well, were it not that its exercise, or rather neglect of exercise, is at the expense of those who are too young to act for themselves, and whose protector the State should be. It is quite true that universal vaccination will not exterminate small-pox; but this admission is surely not to be employed as an argument against our obtaining the largest amount of diminution of the evil it is capable of producing.

2. That Inoculation should still be peremptorily prohibited: for if even its performance were restricted to medical men, numberless *foci* of disease must be still in course of production.

3. That at the approach of puberty, say about 10 or 12 years of age, *Re-vaccination* should be practised. From 15 to 25 is the period of life

when the majority of cases of small-pox after vaccination occur. During the first quarter of last year, however, no less than 10 children died in London of small-pox after vaccination, whose respective ages were 9, 8, 6, (two,) 5, 4, (three,) 3 years, and one six months. Dr. Gregory, commenting on these cases in his letter to the Registrar-General, observes:—

"In reasoning on these cases, it should be borne in mind, that they are the first of the kind which have been brought before the notice of medical men. Similar occurrences may have taken place, but they have attracted no attention here or abroad. No corresponding cases have been recorded in any of the Quarterly Reports transmitted by the Provincial Registrars of England and Wales. Nothing parallel to them has occurred in the experience of the Small-pox Hospital. The earliest age at which small-pox has there been observed to prove fatal is 14 years, though several instances of the disease in a milder form have occurred at earlier dates. These considerations afford ground for supposing that lymph of an imperfect quality had been used in some, at least, of these instances."

4. That measures should be taken to obtain accurate statistical tables of the various facts relating to vaccination. This would seem to be one of the natural functions of the "National Vaccine Establishment;" but we are not aware that it has ever contributed one fact in its wretchedly meagre Reports to the advancement of our knowledge of the subject. Reference is made in that of the present year to some recent document furnished to Sir James Graham, respecting the occurrence of small-pox after vaccination; but, upon inquiry, we cannot learn that any such is accessible to the profession. This should not be, especially as former statements upon this subject by the Board have not been the most accurate possible. It is pleasing to contrast with the inertness of this body the active usefulness of the Registrar-General's department, by means of which so much invaluable information has been accumulated, and arranged, in so short a period of time. To this quarter, indeed, we can alone look for furthering inquiries upon this subject as regards the dead; but we sincerely hope that the opportunity of another census will not be passed over without some attempt being made to ascertain the exact condition of the living in respect to vaccination. We would suggest, in the mean time, that the various Registrars should be instructed to inquire, in *every case* of a child's death being registered, whether it had been vaccinated or not: and that equally whether such child has died of small-pox or not. We believe the public would be somewhat startled at the amount of non-protection which would thus be disclosed. At all events, this inquiry should always be made when death has arisen from small-pox; whereas at present it sometimes is, and sometimes is not, made.

Sir Matthew Tierney's *brochure* is a *little* out of date, seeing that the latest information contained in it comes down only to 1804, and that the aspect of the question has undergone some alteration since then.

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I. THE POWER OF THE SOUL OVER THE BODY, CONSIDERED IN RELATION TO HEALTH AND MORALS. By *George Moore*, M.D., &c. 8vo., pp. 305. London, 1845. Longman & Co.

II. DES HALLUCINATIONS, OU, HISTOIRE RAISONNÉE DES APPARITIONS, DES VISIONS, DES SONGES, DE L'EXTASE, DU MAGNETISME, ET DU SOMNAMBULISME. Par *A. Brierre de Boismont*, D.M., &c. 8vo., pp. 615. Paris, 1845. Bailliere.

III. RAPPORTS DU PHYSIQUE ET DU MORALE DE L'HOMME. Par *P. J. G. Cabanis*. Nouvelle Edition, par le Dr. *Cerise*. 12mo., pp. 567. Paris, 1843.

IV. THE ANATOMY OF SLEEP, &c. By *Edward Binns*, M.D. Second Edition, with Annotations and Additions by *Earl Stanhope*. 8vo., pp. 505. London, 1845. Churchill.

V. SEVEN LECTURES ON SOMNAMBULISM. Translated from the German of Dr. *Arnold Wienholt*, by *J. C. Colquhoun*, Esq., Advocate, author of Isis Revelata, &c. 12mo., pp. 219. Edinburgh, 1845. A. & C. Black.

THE several works, whose titles we have prefixed, embrace a variety of subjects that certainly have no very immediate relation the one to the other. They all, however, serve to establish or illustrate a great physiological and practical truth—the Influence of the Mind and feelings upon the state of the bodily Health; and it is with the view of drawing the attention of the reader to this important topic that we have coupled them together upon the present occasion. We gladly avail ourselves of this opportunity of offering a few remarks on a question that cannot but be interesting to every medical man, and to the undue appreciation of which may be traced, we believe, not a few of the fallacies, as well as difficulties, in the history and treatment of disease.

That the state of the mind and moral feelings has much to do with the induction, the persistence, and the final issue of many maladies, will not be disputed by any one, however ignorant he may be of the structure and functions of the body; personal experience too "feelingly persuades" him of its truth, and prevents him, alas! from remaining long in ignorance of the fact. There is a continual acting and re-acting of mind upon body, and of body upon mind. The one cannot suffer without the other immediately sympathising along with it. A fit of indigestion, or a twinge of the toothache, levels the philosopher with the common herd of mankind; and, on the other hand, a feeling of shame will instantaneously crimson the cheeks; a sudden alarm will make the heart knock against the side and paralyse the limbs; intense grief will so wither up the frame as to blanch the hair in a single night; while, on the contrary, a noble effort of the soul has been known to bid defiance for a time to the severest agony,

and put even a temporary check to the onward march of death. The physician, we need not say, has by far the most ample opportunities of studying this mutual and reciprocating relationship between the mental and corporeal parts of our frame. Not a day passes over without some example or another being brought under his notice: nay, there is scarcely a single case of disease that does not afford an illustration of its force, in a greater or lesser degree. The varying cares and troubles that attend every period of life from adolescence to old age; the anxieties and turmoils of emulation, love, worldly business, domestic vicissitudes, thirst for praise, ambition, &c., and that host of minor sorrows and chagrins that follow so closely upon the steps of man—all tend to disarrange that exquisite harmony of combined functions that constitutes the state of health. And as the hardest rock may either be rent in pieces by the explosion of the ignited mine, or be gradually worn away by the ceaseless dropping of water upon its surface, so may the strongest frame either be shattered by the whirlwind of passion, or decay under the slow operation of incessant disquietude.

No author, in the present day, has written so ably or so effectively on this most interesting subject of inquiry as Dr. James Johnson. His works on Indigestion, Gout, &c., abound with numerous valuable remarks that well deserve attentive consideration; but it is more particularly to his "Change of Air," and his "Economy of Health," that we would refer the reader for the most shrewd and practical observations that, as far as we know, are to be found anywhere. Their perusal will not fail to convince every one of the high importance of attending to mental and moral agencies in the treatment of disease. Every year that we live, we not only see but *feel* the sound truth of this remark. The resources of medicine are not confined to the *Materia* Medica. Hippocrates must have thought so when he said—Δει μεταγειν την σοφιαν εις την ιατρικην, και την ιατρικην εις την σοφιαν; ιατρος γαρ φιλοσοφος ισοθεος. There is a *medicina mentis* as well as a *medicina corporis*. The accomplished physician will never neglect the use of moral therapeutics. His mission is of a higher character than that of being a mere prescriber from the formulas of the Pharmacopœia. If he cannot indeed "minister to a mind diseased," he may yet have it often in his power to soothe many of the secret sorrows and troubles of the heart. A kind expression, an unobtrusive inquiry, a word in season betokening interest and regard, may serve to draw out the real cause, and thus lead to the cure, of a pining sickness that had long resisted the ablest efforts of the mere practitioner. And never was it so necessary for medical men to act this benevolent and considerate part than in the present day, when there is so much mental disquietude among all classes of society, and among persons of all ages—owing doubtless to the increasing excitements of progressive civilisation, of misdirected education and discipline, of commercial vicissitudes, of political agitation, and of the numerous disturbing elements that spring from these sources. How strikingly is the truth of this displayed by the melancholy fact, that just in proportion as nations advance in outward prosperity and in intellectual refinement, so does the relative number of lunatics among their inhabitants seem to increase! Is it not humiliating to think that there is a greater proportionate

amount of Insanity in England, France, and America than in semi-barbarous Russia or in enslaved Turkey?

But we must quit these generalities, and proceed to work out the theorem which we have proposed for consideration; viz., the Influence of the Mind upon the health of the Body. In this inquiry, we shall first offer a few remarks "On the effects of mental attention on bodily organs"—a subject that has been *effleuré* rather than discussed by Dr. Holland, in his Medical Notes and Reflections.

It is a well-known fact that, if the attention be earnestly or for any length of time directed to any part of the body, a sensation of uneasiness and even of pain will almost inevitably be induced in that part. A toe may be made to ache, the nose to itch, the stomach to be affected with sickness, the bladder to discharge (or perhaps to refuse to discharge) its contents, and so forth, by merely thinking of, or fixing the attention upon, these organs. It is upon this principle that we can understand how it comes to pass that, in nervous and irritable constitutions, a pain once felt in a part is almost sure to return again and again, until perhaps it becomes fairly established, and—after continuing for days, or weeks, or even months, and resisting every remedial means that may be tried—will suddenly cease upon some strong impression being made upon the mind and feelings.

*Case.*—A young gentleman gave up his situation in a merchant's office in a pet. He soon became fidgetty and uncomfortable, not knowing how to occupy himself, and having no immediate prospect of employment. Before a week was over, he began to complain of a sharp pain in one of his knee-joints. It was leeched, fomented, and so forth, but seemingly to no purpose; and, as he was of a scrofulous constitution, his medical attendant began to be somewhat uneasy about the complaint. It so happened, about this time, that this young gentlemen's father had heard of a favourable opening for his son as a partner in a commercial house, and had made all the preliminary arrangements for the union. From the first intimation of this piece of good news, all pain in the knee ceased, and health was at once restored.

We shall give another illustration from our own experience.

*Case.*—A gentleman, aged about 30, and of highly sensitive feelings, had been for some years subject to severe attacks of Neuralgia in the left infra-orbital nerve. During this time he was a clerk in a writer's office in Edinburgh, but had been long anxious to leave it and come to London. At length he did so: and, although for several months his mind was kept anxious from the uncertainty of success, he never experienced any return of his suffering. He obtained employment abroad, and has now remained for several years quite free from pain in the part affected.

Cases of this description are most frequently observed in hysterical girls and women; and we need scarcely say that the affection often assumes in them a most Proteian character. In the treatment of such maladies, the medical man who is bold and confident, and full of good promises to his patient, will succeed the best. Hence the frequent success of the empiric over the *regular*.

Mr. Quain once related, at the Westminster Medical Society, a curious

case illustrative of the morbific effects of the attention being inordinately directed to a particular part of the body.

"A gentleman, who had constantly witnessed the sufferings of a friend afflicted with stricture of the œsophagus, had so great an impression made on his nervous system, that after some time he experienced a similar difficulty of swallowing, and ultimately died of the spasmodic impediment produced by merely thinking of another's pain."—*Moore*, p. 273.

In the following case, there was an exciting cause. A lady accidentally swallowed a plum-stone. No doubt it passed at the time into the stomach; but she persisted in believing that it stuck in her throat, in consequence of an uneasy feeling remaining in that part. The neck was accordingly leeched and poulticed, and a probang was passed several times down her throat!—as a matter of course, to her great inconvenience, and without any benefit to the guttural discomfort. It gradually became less and less and ultimately ceased; but it was from this date that her general health began to decay. Symptoms of heart-disease (which probably had been existing for some time) made their appearance; these were followed by dropsy, of which she died.

Dr. Moore attributes the curious phenomena in the case of Col. Townsend, who had the power of arresting the movements of his heart at will, to disease of that organ, under unnatural attention to its action. It may be worth while briefly to notice this remarkable instance of the influence of the mind over the body: it was originally related by Dr. George Cheyne.

"A Colonel Townsend, residing at Bath, sent for Drs. Baynard and Cheyne and a Mr. Skrine, to give them some account of an odd sensation which he had for some time felt, which was, that he could expire when he pleased, and by an effort, come to life again. He insisted so much on their seeing the trial made that they were forced at last to comply. They all three felt his pulse which was distinct, and had the usual beat. He then composed himself on his back for some time. By the nicest scrutiny they were soon unable to discover the least sign of life, and at last were satisfied that he was actually dead; and were just about to leave him, with the idea that the experiment had been carried too far, when they observed a slight motion in the body, and gradually the pulsation of the heart returned, and he quite recovered. In the evening of the same day, however, he composed himself in the same manner and really died." P. 224.

There is not a part or organ of the body in which existing uneasiness or discomposure may not be aggravated or relieved, according as the attention is directed to, or diverted from, it. The function of Respiration is not a little affected in this way. Look at a person yawning, nay, only read about the act, and straightway you begin to imitate it. A fit of Asthma has been induced by merely seeing another person affected with it. Many obstinate and most distressing Coughs are kept up and aggravated by undue apprehension of their return.

*Case*.—A gentleman, 75 years of age, of intellectual habits and not mixing much in society, has for the last 25 or 30 years been subject to a violent tearing sort of a cough, which returns in frequent paroxysms of great severity; these paroxysms will sometimes last for nearly half an hour at a

time. As a matter of course, the cough is always much worse if any cold is caught; but even in summer, it never fairly leaves him: more especially when he goes to bed, and when he rises in the morning. He has tried a host of remedies, and consulted at different times many medical men, all of whom have been agreed on this one point, that the lungs are not materially affected. His friends have always observed with pleasure that, whenever his attention is agreeably occupied, the cough has generally ceased to annoy him. Thus, although he has been more than usually harassed with it during the week, it disturbs him, on the whole, very little in church on Sundays. Pleasant company too has always the same good effect. Latterly, he has found a modicum of good whiskey toddy, taken at bed-time, have a decidedly quieting effect upon the cough.

*Case.*—A middle-aged lady, of a highly-nervous and excitable temperament, has for the last twelve or fifteen years been distressed at times—more especially during the winter and spring months—with troublesome cough and most profuse expectoration, so as to confine her not only within doors, but even to her bed-room, for months at a time. We can give no exact particulars about the symptoms, having never seen her until the last few months; but we have heard that her friends have often believed that she was falling into a state of confirmed consumption. Her mind and feelings have long been kept in an anxious mood, in consequence of the ailing health and vexatious disappointments of her husband, a man of highly cultivated and impressionable mind. Latterly he has attained a comfortable situation in a government office; and the consequence of this has been that her health has so much improved (without the aid of any medical treatment) that, during the whole of this most trying winter and spring (1844–5,) she has been able to go out in almost all weathers.

These facts and remarks will perhaps be deemed sufficient, in proof of the position that we laid down as to the influence of "mental attention upon our bodily organs." We shall now go upon another tack, working our way, however, to the same point. Our present observations are intended to show the *injurious effects of excessive study.*

Every one, accustomed to the labours of the closet, knows full well the tight uncomfortable sensation about the head that is apt to follow any unusually long or intense application of the mind. He feels as if a cord was passed firmly round the temples, or as if a weight was pressing upon the forehead right over the eyes. The sight becomes confused, and the hearing indistinct; and there is often such a bewilderment of his ideas that he scarcely knows what he is about. Spalding tells us that on one occasion, when his mind had been long kept on the stretch, he attempted to draw out a receipt. After writing two words, he found that he could proceed no further. For half an hour, he could neither think consecutively, nor speak, except in words which he did not intend. When he recovered himself, he found that, instead of writing on the receipt "fifty dollars, being half a year's rate, &c," he had written "fifty dollars, through the salvation of Bræ—;" the last word being left unfinished, and without his having the least recollection of what he intended it to be. Sir Joshua Reynolds, after a long day's work in his studio, used not unfrequently to find, when he went out, that he saw trees in the lamp-posts, and moving

shrubs in the men and women in the street. Dr. Watts tells us that, after prolonged study, he felt as if his head were too large to allow him to pass out of his room door; and a gentleman, after delivering a lecture at the College of Surgeons, said that it seemed to him as if his head actually filled the entire hall. Now in these, and in all such-like, cases, there must have been a very considerable disturbance in the equable circulation of the blood through the head, and consequently the incipient stage of a more serious lesion, had not the abnormal condition been timely removed by the suspension of the inducing cause. Hence it comes to pass that apoplectic and paralytic seizures are perhaps the most frequent causes of death in the case of studious and reflective men, more especially when they have passed the meridian of life.

Certain studies are, as a matter of course, more hurtful in their influence upon the brain than others. None are so injurious as abstract and metaphysical speculations, wherein the mind is intently occupied in attending to its own operations, or where one faculty is exercised, without relief or change, for an undue length of time. Dr. Moore has well observed on this subject, that "it would indeed appear that our Creator designed us to be employed rather on objects around us, and in association with the activities of other minds, than on the operations of our own; for we find that our efforts to concentrate attention on the process of our own thoughts speedily begets a most painful confusion; nor can we even summon our memory for the restoration of a forgotten idea and search with any diligence for its recovery, without such fatigue as either compels us soon to relinquish the pursuit, or else, if we obstinately persist, induces a nervous headache and imbecility, nearly approaching to aberration of intellect."

As bearing upon the same subject, we may here, *en passant*, allude to the excessively injurious effects of overstrained Education on the health of children and young people. One of the most common and hurtful practices of the present day is that of cramming the youthful mind with book knowledge, to the too general exclusion of that far more valuable instruction to be derived from Nature's own sweet page, and to the consequent neglect, at the same time, of proper attention to the state of the physical health. It may be laid down as an inflexible precept, that, while the body is growing, the mind should never be very much worked. This remark holds true more especially up to the 12th or 14th year of life; for, till that period, the size of the brain, and consequently the quantity of blood sent to it, are greater in proportion to the rest of the frame, than at any subsequent period. If then, from any cause, this organ is unduly or over-long excited, can we wonder that the seeds of cerebral mischief are often laid, or, if not laid, are at least promoted to more active development, by the pernicious system of modern education? How general is the remark that Hydrocephalus, for example, is most frequent in those children, who are most clever at their books, and are therefore the pets of their parents.*

* M. Boismont remarks with perfect truth that misdirected education in youth is a frequent source of Hallucinations in after-life. The judgment and feelings are scarcely, if at all, disciplined; while the fancy and desires are indulged without moderation or control. The nursery tales of ghosts and witches often haunt the dreams of the vacant mind, and thus serve to aggravate, if they do not induce, the delusions and aberrations of insanity.

The prematurely developed mind is too often the precursor—we might almost say, the sure harbinger—of early death. Do we not know that, if the tree begins to produce abundance of fruit, before it has attained its mature development, it soon exhausts itself and becomes, at best, unprofitable, if it does not entirely waste and wither away? And so it is with the complex machinery of the human frame. If the mind be overworked by excessive culture, while Nature is engaged in perfecting the body, the demand upon the energies of the system is too great; the one becomes exhaused, while the other is stinted of its fair proportions and dies.

There is good reason to believe that the state of the cerebral circulation is immediately and directly affected by every active emotion, and every strong effort of the mind. The quantity of the blood then sent to the brain is greater than it was before, and this increased flow continues, as long as the mental excitement lasts.

"Sir Astley Cooper had a patient, whose skull being imperfect allowed him to examine the movements of the brain. Sir Astley says, 'I distinctly saw the pulsation of the brain was regular and slow, but at this time he was *agitated by some opposition to his wishes*, and directly the blood was sent with increased force to the brain, the pulsa[illegible] a frequent and violent.' Dr. Pierquin witnessed the following case in the hospital of Montpellier, in 1821. Dr. Caldwell states that 'the subject of it was a female, who had lost a large portion of the skull and *dura mater* in a neglected attack of *lues venerea*. When she was in a dreamless sleep her brain was motionless; when her sleep was imperfect and she was agitated by dreams, her brain protruded from the cranium; in vivid dreams, *reported as such by herself*, the protrusion was considerable; and when perfectly awake, especially if engaged in active thought or sprightly conversation, it was greater still." P. 99.

Do not such facts as these, and the considerations which they suggest, most emphatically shew the first-rate importance of mental quietude in the treatment of cerebral disorders—more especially in those individuals in whom, from age or other causes, there may be reason to suspect a tendency to encephalic hæmorrhage? But it is not only the circulation in the brain that is affected; the *tone*, if we may so speak, of the entire cerebro-spinal axis is apt to suffer a simultaneous change. Any intense or long-continued application of the mind is invariably followed by an exhaustion of nervous energy, and a corresponding depression of spirits. Hence the irritability and restlessness that so generally accompany the poetic temperament. Byron has given, in his letters, a graphic account of the wretched hypochondriasis that he was apt to fall into, after an intellectual debauch. And who can doubt, after reading the life of Sir Walter Scott—whose natural character seems to have been far more equable than that of the *genus irritabile* generally—that the extraordinary efforts, which he voluntarily imposed upon himself after the occurrence of his misfortunes, shattered his mind, and aggravated, if they did not directly occasion, the cerebral disease of which eventually he died?

All imprudent thinkers, says Dr. Moore, are obnoxious to an accumulated irritability of brain.

"Even our great philosopher, Newton, sometimes gave vent to ill-temper or soothed his nerves by the bane of tobacco, instead of taking rest or appropriate change. And many of our best artists, whether in words or more solid materials,

have been martyrs to head-ache and the fashion of excitement. Thus Wilkie was often obliged to shut himself up in a dark room, because light was too stimulant for his brain, and Paganini paid dearly for his consummate excellence as a musician. Speaking to a friend, he stated that he scarcely knew what sleep was; and his nerves were wrought to such almost preternatural acuteness, that harsh, even common sounds, often became torture to him. He was sometimes unable to bear a whisper in his room. His passion for music he described as an all-absorbing, a consuming one; in fact he looked as if no other life than that ethereal one of melody were circulating in his veins; but he added, with a glow of triumph kindling through deep sadness,—'*Mais c'est un don du ciel.*'" P. 249.

Such over-wrought excitement of mind not unfrequently terminates in positive Insanity. Swift himself predicted this woful calamity in his own case—to use his own forcible words, *that he would first die at top.* How striking the contrast between the latter end of the witty Dean and that of Dr. Wollaston! This truly Christian philosopher died of disease of the brain; and yet he preserved to the very close of his life the philosophic habit of observation which so eminently distinguished his character. "Sublime is the lesson," we use the words of Dr. Moore, "to see how he exercised the higher faculties of his intellect in reasoning on the causes and progress of his malady in the disorder of his sensations, memory, and the power of motion, as it advanced in its incursion upon one part after another of those portions of the brain which subserve the mind in relation to will and consciousness. He noted the phenomena of death, as it gradually took possession of his body, and experimented on his faculties to ascertain the amount of living power remaining."

Enough has now been said on this second argument of our subject. We shall therefore pass on to another, and seek our illustrations in that curious chapter of Physiology that treats of *the Effects of different Emotions upon Sensation.*

How much is the sharpness of our various senses affected by the mood in which we happen to be! When, from any cause, the mind is gloomy and depressed, our sensual perceptions are blunted or depraved; whereas, on the other hand, all gladdening emotions give strength and vigour to their exercise. Under the influence of joy, the eye sees more brightly; the ear hears more clearly; and the whole body is more quick and alive to external impressions than it was before. What says Shakspeare of the all-pervading influence of Love!

> "He, with the motion of all elements,
> Courses as swift as thought in every power;
> And gives to every power a double power,
> Above their functions and their offices.
> It adds a precious seeing to the eye:
> A lover's eyes will gaze an eagle blind;
> A lover's ear will hear the lowest sound,
> When the suspicious head of theft is stopped;
> Love's feeling is more soft and sensible,
> Than are the tender horns of cockled snails."

Those persons, in whom any of the senses is impaired or partially defective, can appreciate the influence of their feelings and state of mind on the acuteness of that sense's perceptions better than those in whom there is no defect. How often do we observe that this is the case with persons

whose Sight or Hearing is somewhat at fault. Their infirmity varies not a little in degree at different times; they can see or hear much better on some days than on others, and in the company of those they like than in that which is unpleasant to them. All this is quite independent of the state of the atmosphere, or indeed of any external agency. The cause is in themselves. The grand secret with them is to keep the mind cheerful, and, at all events, tranquil; not over-anxious at the present moment, nor gloomily anticipating an increase of their infirmity, which they may never experience. One-half of human ills is in anticipation. As if not satisfied with present suffering, we perversely add to their amount by conjuring up those that are (perhaps are not) in futurity; and thus it is that, of our own influences, we make "coming events cast their shadows," not "before," as they ought to do, but "behind," darkening still more and more the already dim path of our journey through life. Horace was a wise man, if he practised his own precept:—

> "Tu, quamcunque Deus tibi fortunaverit horam,
> Gratâ sume manu; neu dulcia differ in annum."

The maxim is a golden one; would that we all followed it out better in practice.

Every deaf person will tell you that, whenever he is at all agitated, or more than usually anxious to hear, his Hearing is sure to be duller and more confused than ever. Does not this simple and most common fact show how much the activity of the sensual perception depends upon the state of the mind? A middle-aged gentleman, long resident in India, has been partially deaf for the last 15 or 20 years. As a matter of course he has consulted lots of aurists, and tried all sorts of remedies. It is now some eight or ten years ago since he first spoke to us on the subject. From a few observations that he made, we at once perceived that the deafness was in a great measure *nervous*, and therefore no doubt liable to frequent variations. He was advised to do nothing to his ears—the tympanum in one was broken—but attend to his general health and keep his mind easy. We met him the other day, upon his recent return from Calcutta, and were glad to find that he now hears better than he has done for several years past; although he has long ceased to use any local remedies for his deafness.

We cannot pass over this opportunity of denouncing the dishonest quackery that so generally prevails among most professed Aurists—what is the etymon of this word; *auris* or *aurum*?—in the present day. Patients are fleeced of their guineas, visit after visit; their hopes all the while being kept up by very unfair promises of ultimate relief, until at length their purse, if not their patience, is worn out, and they are sent home not a whit the better, although their cases may flourish among the cures in the next yearly report of Mr. ——'s institution! So completely satisfied are we of the quackery that prevails in this department of the Healing art, that we do not hesitate to assert that not one case in a hundred of deafness, which has not yielded to the use of the most simple remedies—dropping a little warm oil into the ears at night, and syringing them with tepid water in the morning—is ultimately benefited by all the boasted refinements of Aural Surgery.

What we have said of the Influence of the mind and feelings on the senses of *Sight* and *Hearing* applies with still greater force to the exercise of our muscles under certain circumstances, when their action becomes irregular or impaired. Every one knows the perturbing effects of haste and passion on a *stammerer's* utterance; and the same remark applies to that peculiar affection of the hand that has been termed the *writer's cramp*, or stammering of the fingers. If the attention be directed to the suffering part, and the person be more than usually anxious to continue writing, he will inevitably find his annoyance to increase, until he is forced to abandon the exertion. (The reader will find the reports of several cases of this troublesome complaint in the Medico-Chirurgical Review, for July 1842.)

Our *tactual sensations* and perceptions also are not a little influenced by the existing state of the mind. We shall allude to but one example, in the way of illustration of this. Who is there among our readers who has not found that he was much more readily *chilled* in a winter's day, when his spirits were low and languid, than when his heart beat high with joy and hopeful confidence? A mere effort of the will will do the same. Let him but whistle an air, or begin and spout a passage from a favourite author, and the want of the great coat is not felt so much as it was before. We read that Charles XII., at the siege of Frederickstadt, was in the habit of sleeping on the snow, wrapped only in his cloak, and that he bore extremes of cold, hunger and fatigue, under which numbers of his soldiers perished. They, poor fellows, had naught but their present sufferings to think of; while the mad monarch was all the while inflamed with the noble rage of ambition.

Dr. Darwin very happily illustrates the influence of the mind being amused in removing or preventing the sense of *fatigue*, by reminding us of what we often witness in a child. Although heartily tired, we have only to give the little fellow our walking-cane, he straightway plants it between his legs, and rides off upon it, as merry as a lark.

The same writer observes that he knew a gentleman, who told him that he was in the habit of relieving the feeling of weariness at any time by summoning up any angry idea in his mind. A joyful or a merry one, especially if it gave rise to a hearty laugh, would have answered quite as well, and would surely have been a much more pleasant remedy.

The *modus operandi* is obvious: a temporary energy is imparted by the mere effort of the will to the nervous system; and the immediate effect of this is to invigorate the exercise of the Respiratory and Circulatory systems—on the state of which the feeling of *fatigue* so much depends.

Take again the case of insensibility to *pain* under any strong mental excitement. A leg or an arm may be shot away during the mad fury of the fight, and the soldier will scarcely feel the pain of his wound until he has been carried off the field. The poor Hindoo will submit, at the bidding of his priest, to the most horrid inflictions of torture, and he seems to be almost insensible to his sufferings; and how often has the devoted martyr been known to bear unmoved the most revolting excess of cruelty from his persecutors! It is indeed astonishing what amount and duration of bodily suffering the human frame is capable of enduring, when the mind is worked up to a high pitch either of heroic resolution or of fanatic enthusiasm. The history of religion in all countries teems, alas! with too

many examples of the truth of this assertion. Thank God, the spirit of the martyr often triumphs over the very sorest sufferings of its mortal tenement.

Of all the emotions of the human heart, none has a more animating and sustaining influence than Hope. It lightens the trials and afflictions of the present moment, and throws its cheerful radiance around the dark uncertainty of the future. Were it not for its blessed influence, the Body, as well as the Mind, would often sink under the sufferings and sorrows to which man is born, as the sparks fly upward. Many are the examples which we might draw from history, in illustration of its power in keeping up the energies of our bodily frame under all sorts of pain, privation, and disease. During the siege of Breda in 1625, when the garrison was on the point of surrendering from the ravages of Scurvy—principally induced by mental depression—a few phials of sham medicine were introduced, by order of the Prince of Orange, as an infallible specific. It was given in drops, and produced astonishing effects. Some of the soldiers, that had not moved their limbs for months before, were seen walking in the streets, sound, straight, and well.

Park tells us in his Travels that one day, in his journey through the burning desert, he laid himself down on the sand, exhausted with privations and fatigue, and ready, as he supposed, to die. He chanced at that moment to spy a tiny flower that had reared its head above the ground. What!—thought he—will that Providence which has watched over this humble plant, not care for me who has been taught to regard Him as a heavenly Father? The thought gave vigour to his drooping soul; and he immediately felt both his strength and his resolution fortified from that hour.

We read too that when Bruce, the hero of Scotland, was immured in a dungeon, at a time when all his prospects were most dark and unpromising, his mind was kept from desponding by watching the often repeated attempts of a spider to carry its thread from one point of the wall to another. Although often baffled, the creature persevered time after time, until at length it succeeded in effecting its wishes.

The account given by Xenophon of the sudden revival of his soldiers' spirits, when they first caught a glimpse of the sea, is so well known that it need not be particularised.

When we remember these and similar facts, can we wonder at the striking and immediate salutary effects which the sudden intelligence of good news will often produce on the result of many severe surgical, as well as medical, maladies? The patient straightway becomes fifty per cent. better. His pulse beats fuller and stronger, his breathing is more deep and regular, his eye glistens, and his appetite returns, and he looks as if suddenly relieved from the oppression of some morbific incubus. It is to this source that we must look for the cause of the marked contrast between the mortality among the wounded of a victorious, and that of a conquered, army? The most severe, and often too seemingly hopeless, cases recover in the one; while, in the other, Hospital Gangrene, Erysipelas, Typhus and Dysentery usually decimate the poor sufferers; and even the more favourable cases are both slow of recovery, and imperfect in their convalescence.

The sad history of our expedition to Walcheren affords a painful illus-

tration of this fact. That to New Orleans might yield another; and, more recently, the disastrous retreat of our troops from Caubul offers a melancholy instance of the morbific effects of moral depression on the physical energies of our nature. Contrast the histories of these most painful events with those narratives of Byron's shipwreck, or of Captain Bligh's voyage in a boat across the Pacific—in both of which cases, despite the most fearful sufferings and privations, scarcely one man died from *sickness*—and you at once perceive the preservative and sustaining influence of mental and bodily activity, cheered by the "strength-inspiring aid" of Hope. But it needs not to turn to tales of "moving accidents by flood and field," to attest the power of this emotion on the body. Domestic life affords almost daily proofs.

Dr. Paris mentions a curious example of the salutary effect of confident expectation in the relief of disease. When the powers of the *nitrous oxyde* were discovered, Dr. Beddoes at once concluded that it must be a specific for *paralysis*: a patient was selected for the trial, and the management was entrusted to (Sir Humphry) Davy. Previous to the administration of the gas, the young chemist inserted a small pocket thermometer under the tongue of the patient, as he was accustomed to do upon such occasions, to ascertain the degree of animal temperature, with a view to future comparison. The paralytic man, wholly ignorant of the nature of the process to which he was to submit, but deeply impressed, from the representations of Dr. Beddoes, with the certainty of its success, no sooner felt the thermometer under his tongue, than he concluded the *talisman* was in full operation, and in a burst of enthusiasm declared that he already experienced the effect of its benign influence throughout his whole body: the opportunity was too tempting to be lost; Davy cast an intelligent glance at Mr. Coleridge, and desired his patient to renew his visit on the following day, when the same ceremony was performed, and repeated every succeeding day for a fortnight, the patient gradually improving during that period, when he was dismissed as cured, no other application having been used.

Dr. James Gregory used to relate in his lectures an instance of the power of the imagination in influencing the operation of a medicine, which may be here aptly introduced. One of his pupils, who labored under fever, being unable to obtain any rest, was told that an opiate had been prescribed for him at bed-time; but the student misunderstood the doctor, and supposed that he was to take a purgative. Accordingly, when the physician saw his patient on the following morning, and inquired whether his opiate had procured for him any sleep, "Opiate!" exclaimed the patient, "I understood it was purgative, and very actively has it operated, and I am much relieved by it."

In strongly-attempered minds, a mere act of firm Resolution has been known to produce all the animating effects of joyful assurance. For example, it is related of Muley Molok that, in the last few hours of his life, upon hearing of the threatened defeat of his troops, he ordered his servants to carry him on his litter to the field; he calmly looked around, gave the necessary orders, and then laying himself back, expired. Mr. Kingdon once related, at the Medical Society, a curious case that well displays

the influence of a seemingly involuntary exertion of the mind upon the body, when labouring under disease. The patient, an old man, afflicted with shaking palsy, had been long unable to walk. The child of a friend was admitted to see him; and so greatly delighted was he, that he arose, walked across the room, took some paper, went to another part of the room, filled the paper with small shells, gave it to the child, and then sat down as paralytic as before!

We have known a result, somewhat akin to this, occur in a case of what may be called Hysterical Paralysis—in consequence. not of any act of the will, but of an unconscious effort during the excitement of delirium.

*Case.*—A middle-aged unmarried lady had been, for 15 or 16 years, confined to the bed and sofa, in consequence of the utter powerlessness of one of her lower extremities. A great number of medical men had been consulted, and the opinion of all was that no organic affection existed anywhere, and that the case was one of those anomalous and unmanageable affections which are apt to occur in females of a highly nervous and irritable character. During the delirium of an attack of fever, she arose from her bed—an effort which she had not made for upwards of fifteen years—and walked from one bed-post to another: this she repeated more than once, before her attendants replaced her in bed. On the circumstance being mentioned to us, we suggested the propriety of not checking, but of encouraging, her to walk about the room, in case she again rose. This plan was followed; and the result was that the patient ultimately recovered the use of her limbs so well as to be able to walk for one or two miles at a time. In this state she continued for two or three years; and then unfortunately gradually relapsed into her former state of semi-paralytic helplessness, in which she still remains.

We have heard of more than one similar case, in which a more complete recovery took place on a proposal of marriage being made to the long sofa-ridden invalid; and probably all have read of the miraculous (!) cure, some years ago, of a young lady at Camberwell, in answer to the prayers of Prince Hohenlohe. It is in reference to such cases as these that Sir Benjamin Brodie has acutely remarked that it would seem as if it was rather the will than the muscles that were paralysed. We need not add that the lesion is one of function and not of structure. The throat and organs of speech are sometimes affected in this manner. Many cases of Hoarseness, and even of complete Aphonia, appear to be of a purely nervous character, and have therefore been known to get well on a sudden by a strong impression being made on the mind. "A young lady," (we quote from Dr. Darwin) "who had for many months been affected with an almost complete aphonia, and had in vain tried a variety of advice, recovered her voice in an instant, on some alarm as she was dancing at an assembly. Was this owing to a greater exertion of volition than usual?—like the dumb young man, the son of Crœsus, who is related to have cried out, when he saw his father's life endangered by the sword of his enemy, and to have continued to speak ever afterwards."

We may here remark that, even in cases of confirmed Paraplegia, it is well known that (generally at least) there is no organic change either of

the muscles or of the nerves of the palsied part: all, that is really deficient or wanting *there* is that the will has ceased to have the power over the affected limb or limbs, in consequence, it may be, of a lesion or disturbance in some part of the cerebro-spinal axis. Not only may the affected muscles be stimulated to action by the influence of Electricity and Galvanism; but, even in some ordinary natural acts, they are called into action, and contract as in health. Thus, in yawning, sneezing, and such like acts, the paralytic member will join in the general consentaneous movements of the body, although it may be wholly disobedient to the mandates of the will. Such movements must indeed be considered as involuntary; and yet a strong effort of the mind has been known to produce the same results. It is Sir Charles Bell, we believe, that remarks that he had seen a case where a woman, who had lost the use of both arms, was able to hold up her child as long as she kept her eyes fixed upon it; but, as soon as she ceased to look at it, or have her attention in any way diverted, she would immediately let it fall; she did not feel the pressure of the weight upon her muscles. We were recently consulted by a woman, who was subject to violent headaches, and attacks of sudden insensibility and loss of consciousness. Among other symptoms, she mentioned that, if she began to laugh, or be in any way excited, when she had anything in her hands, she was forced to let it drop, her arms losing all power of support; although, at other times, she could carry the dishes up stairs with perfect ease and safety. But we must stop this digression, and return *à nos moutons:* the emotion that we shall next allude to, is Fear.

If Hope has an invigorating and animating effect upon the system, this, it is well known, is as powerfully depressing upon all its energies. The whole muscular system, involuntary as well as voluntary, is relaxed and unstrung; the skin is chilly damp, and the body is unable to generate its accustomed amount of heat; the circulation is hurried and irregular, and the blood is unequally distributed; the breathing is short and rapid, or takes place in intermitted deep-drawn efforts; and the nervous system—at least that part of it which supplies the organs of sensation—is in a state (but only for a time) of exquisite and overwrought tension—to be soon followed by one of relaxation and exhaustion. Such are the immediate effects of strong Fear, or Terror, upon the body; those produced by the emotion when less intense, but longer continued, are of the same general character—essentially depressing and enervating. We cannot, therefore, be surprised at its morbific influence. A person has actually been known to have been *talked* into a state of positive and eventually serious, and even fatal, illness. Lord Stanhope gives the following instance:—

"An English physician, while walking with one of his friends in the country, and conversing with him on the effects of imagination, observed a labourer who was advancing towards them, and said, 'That man enjoys excellent health and strength, and yet I could convince him that he is very ill.' This was doubted by his companion, and it was determined to make the experiment. The labourer was accosted by the physician, whom he knew to be such, and questioned about his health, but when he gave the most satisfactory answers to the inquiries, they seemed to excite much surprise, and he was told gravely, and with a sort of

affectionate interest, that he was certainly in a state of disease which required great care. The labourer immediately returned home and went to bed, and replied to his wife, who endeavoured to persuade him that he was in his usual health, 'The doctor says that I am not, and he knows best.' As soon as the physician learned the unpleasant consequences which had ensued, he went to the house of the labourer, and apologized for them, assuring him that he was in perfect health, and that what had been said to him was merely to show the effects of imagination. Nothing that he could urge was of any avail, the labourer persisted that he was very ill, refused to leave his bed, and died in a few days."—*Binns*, p. 484.

Among other effects of this passion, we may remark that it renders the system unusually susceptible of the morbific influence of contagious fevers. The vulgar are surprised at the confidence with which medical men approach patients labouring under the most malignant diseases. Not a few, indeed, of our brethren have fallen victims to their devotion; but many more would unquestionably suffer, if the feeling of dread or apprehension entered their minds. Whenever the energies of the body are reduced—be the cause what it may—below the healthy standard, it immediately becomes less able to resist the depressing effects of a malarious poison. The vigour of the system, therefore, must be sustained, not stimulated, when a person is exposed to such an influence; and certainly there is no cordial more preservative than the animating influence of Confidence and Hope.

Fear very generally produces a relaxation of the sphincters of the mucous passages; hence Enuresis, Diarrhœa, and Abortion are often caused by it. We need scarcely add that Palpitation of the Heart is a very common consequence of this emotion. But fear has not always a morbific effect; it may exert the very opposite—a curative one. Various Mimotic or imitative diseases have been checked by appealing to its influence. Boerhaave tells us that he once had a number of patients seized with epileptic fits in an hospital, from sympathy with a person who fell down in convulsions before them. He was puzzled at first how he should act; but, reflecting that the attacks were produced by a mental impression, he resolved to try the effect of making a still stronger impression to check them. Accordingly he ordered, in the hearing of the patients, hot irons to be prepared and applied to the first person who was seized. The consequence was, that no fit occurred afterwards.

An officer in the Indian army was confined to bed by asthma; he could only breathe in the erect posture. A party of Mahrattas broke into the camp; the invalid sprung out, mounted his horse, and used his sword with great execution. A lady, affected with hysterical semi-paralysis, had been confined to her bed and sofa for years, when a fire broke out in the house where she resided. The hitherto helpless creature rose up, rushed out of the room, and reached the street ere she was aware of what she had done. Hildanus relates that a man, disguised as a ghost, took another, labouring under severe gout, from his bed and carried him down stairs, and there left him. The terrified patient quickly found his way up again, and never afterwards had the gout.

The following extract is from Dr. Watson's Lectures on the Principles and Practice of Medicine.

"Strange stories are recorded—strange, but I believe true—of instantaneous cures of the Gout by strong mental emotion, by sudden terror, by violent wrath. Dr. Rush relates an instance of this. An old man, who for several years had suffered an annual attack of gout, was lying in one of these paroxysms, when his son, by some accident, drove the shaft of a waggon through the window of his room, with vast noise, and a great smashing and destruction of the glass. The old man leaped out of bed, forgetting his crutches; and his wife, on entering the apartment, was surprised to see him walking up and down, and exclaiming angrily against the author of the mischief. The late Professor Gregory, of Edinburgh, was in the habit of mentioning another example to the same effect, authenticated to him by a naval surgeon. It occurred in the person of an officer who was freed from an attack of Gout, when at sea, by an alarm of fire. Whether this influence of certain states of mind be rightly alleged or not, it is clear that we can never hope to make any practical use of such a remedy. Indeed, a fit of the gout has been sometimes *brought on* by a mental shock."

The influence of Fear or rather Disgust, in checking bleeding from the nose and other parts, is well shewn by the common success of a vulgar remedy, the putting of a living toad around the neck. Certain *nævi materni*, and such like-spots, are said to have been removed by the application of a dead man's hand to the part. Whether this be true, we shall not affirm; but there can be no doubt that the disgusting remedies, which at different times have been recommended to expedite Delivery, could not fail to have a decided effect by producing nausea and shuddering. A draught of the husband's urine has long been a favourite remedy in some parts of Germany; and Hartman says that horse dung steeped in wine is very efficacious in promoting the expulsion of the placenta!

None of the Emotions has a more decided or more pernicious influence on the body than Anger. The violent tension of the muscles in different parts impeding the free course of the arterial circulation, and the disordered breathing disturbing the easy transit of the blood through the lungs, the current is necessarily thrown back upon the heart; and this organ, in consequence, labours with inordinate and irregular power to propel it with redoubled force. Hence it is that, under its violent influence, a blood-vessel not unfrequently gives way at some part, or even "the golden bowl (itself) is broken at the fountain."

A gentleman, while engaged entertaining a number of friends in his grounds, stamped his foot in anger at one of his servants. The immediate effect was to bring on an attack of Hæmoptisis, which laid the foundation of his fatal illness.

John Hunter attributed the commencement of his heart-disease to a fit of passion. And, indeed, when such disease is once fairly established, a patient cannot be too much on his guard against the excitement of all strong emotions. Many a person has expired in the very act of execration.

"Broussais and other eminent physiologists are of opinion that rage is capable of generating a most virulent and subtle poison, especially in the saliva. They refer to numerous instances, in which wounds from enraged animals have been followed by effects only to be accounted for by supposing a virus communicated. This opinion coincides with vulgar belief, and if true, as facts seem to affirm, the power of the mind in altering the chemistry of life in a direct manner is thus most clearly demonstrated, But indeed the same fact is equally

evinced by the common influence of emotion over secretion. The classical reader will remember Ovid's fine description of Envy.

> "Pallor in ore sedet; macies in corpore toto;
> Nusquam recta acies; livent rubigine dentes:
> Pectora felle virent; lingua est suffusa veneno." *Moore*, p. 263.

Anxiety and Grief are allied in their effects to fear, and, like it, have a signally depressing influence upon all the functions of the system. The muscles lose their wonted tone, and the nervous system its accustomed energy; the blood moves languidly and does not generate the due amount of animal heat; the appetite fails, and the bowels act sluggishly; the urinary secretion is usually abundant and pale, and the generative organs are languid and relaxed.

As these emotions therefore have a truly withering influence, seeming, as it were, to dry up the very sap, and enervate all the energies of life, can we wonder at such maladies as Dyspepsia, Jaundice, Hœmorrhoids, and even Diabetes and Paralysis, being not unfrequently traceable to such exhausting states of mind and feeling? The diseases now mentioned are all of a more or less distinctly chronic nature; a circumstance indicating that the operation of the obnoxious influence has been slow and long continued. But it may be otherwise; its effects may be immediate.

The bustle of over-Anxiety, as indeed of every restless feeling, has been known to cause sudden death in cases of cerebral or cardiac lesion. A metropolitan hospital surgeon, a year or two ago, fell down in Garraway's auction room, where he had gone to *bid* for a property to be sold. A clergyman, anxious to return home to see his wife lying dangerously ill, expired immediately after he had pronounced the blessing.

Numerous forms of nervous *malaise* may generally be traceable to an over-anxious and irritable state of mind. Medical students know the truth of this in their own experience, when preparing for their examinations: heart-disorder is very common among them.* Dr. Binns relates an amusing instance of a fellow-collegian working himself into the belief that he was labouring under an aneurism of the left subclavian artery, in consequence of hearing a snap in that shoulder, while using the dumb-bells, and of a slight fulness of the left pectoral muscle supervening thereupon.

An attack of Jaundice has been known to be brought on from over-anxiety; but this disease is perhaps more frequently the effect of a fit of anger or of sudden chagrin. Mr. North witnessed a case of this kind, in which an unmarried female, on its being accidentally discovered that she had had children, became jaundiced almost immediately afterwards. The same effect, we may remark, has been produced by intense bodily suffering, by the pain of a severe surgical operation, or perhaps by the dread which

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* Dr. James Johnson remarks, that "Diseases of the Heart were so little attended to before the French Revolution, as to be scarcely noticed by medical writers. The portentous scenes of that eventful period called forth such a multitude of this fatal disease that a volume was soon written on the subject by Corvisart—and the mental excitation, that has ever since continued, has kept up the tendency to affections of the Heart, which are now among the most prominent and dreadful of human afflictions."—*Economy of Health*, p. 96, 4th Edition.

preceded it. The functions of the Chylopoietic viscera are among the first to suffer on all occasions, when there has been severe mental or bodily disquietude. The disorder may not show itself at the moment, or even for several weeks afterwards; but it almost inevitably supervenes; and the patient will then tell you, on inquiry, that he has not felt entirely well for some time before. This is a common occurrence among those who have been watching over the sick-bed of a dear friend; the fatigue of body and anxiety of mind seldom fail of inducing some visceral derangement or another. No remedy, we need scarcely say, is so good as change of air.

Of the digestive viscera, none is so immediately affected as the Stomach itself. The condition of this organ—the "conscience of the body," as it has been happily termed—is modified by almost every impression that is made upon the mind and feelings. The sight of any loathsome object will often excite nausea and sickness; and, if food has recently been taken, it will remain undigested; for it would seem that the secretion of the gastric juice has been suspended or vitiated. Again; every one knows that Fear or Grief will at once take away all appetite, however keen it may have been a moment before. Over-anxiety will do the same; and is not this, we may here inquire, the prolific cause of Dyspepsia among our mercantile and professional classes? For six or eight hours at a time, perhaps, not a morsel of food is taken, and no *besoin de manger* is felt. Then, when the labours of the day are over, they hurry home to a late dinner, eat perhaps voraciously, drink more wine than does them good, and fall asleep on the sofa, to leave the stomach to do its work. The hurtful effects of such a mode of life may be slow of operation, and perhaps will not be decidedly experienced until the person begins "to go down the hill," and to feel that his strength was not what it used to be, or his powers of endurance so great as they once were.

Many of the ailments and diseases of the climacteric period of man's life—the sixth decenniad, or the transition period (at least in most persons) from mature manhood to old age—are unquestionably referable to the state of anxious feeling and mental disquietude that so often occupy the mind at that time. Both mind and body are now losing, if they have not already lost, the energy and elastic spring of by-gone years; we feel less aptitude for exertion, especially in any new line of occupation; and hence, if any mishap occurs in our affairs, we have not the resolution to bear up against it, or to apply ourselves bravely to retrieve the lost ground. Our more youthful fellow-labourers start in before us, and, by their superior activity and less hesitating cautiousness, win and keep the position which we formerly occupied. Besides, how often do domestic cares and sorrows thicken and abound at this period of a man's career! His children are grown up, and must now be disposed of. If they have been expensively educated, they look to their father, as a matter of course, for fortunes to start them in life; and, even in the more humble stations of society, some assistance will be expected by the daughters upon their wedding, and by the sons on entering upon business. Is it not too at this very period of a family's history that the waywardness, if not the positive viciousness and profligacy, of some one member is apt to be most severely felt by the father, who perhaps may have built his hopes of future happiness and prosperity upon the welfare of this very prodigal? We cannot therefore wonder much at

the marked change and incipient breaking-up of the bodily health that is so often observed to take place in the course of the sixth decenniad of life among men, still engaged in business and exposed to the vicissitudes of commercial or professional employment. There is a care-worn expression of countenance; he loses flesh; his spirits flag, except perhaps in company, and then they often brighten up to almost youthful energy upon by-gone topics; his appetite is not so keen and vigorous; the bowels act less regularly of themselves; there is very often a tendency to hæmorrhoids, and in short, to venous fulness generally, more especially of the cerebral and portal systems: hence the torpor and tendency to drowsiness in some cases, and to hypochondriasis and querulous malaise in others. The mind has lost the elastic spring of more youthful years, and has not acquired the apathy of old age Thus it is that—from some worry or vexation, or, it may be, from some slight bodily indisposition, which would have passed away in former years without any inconvenience—a certain degree of feverishness of the system is kept up; the wasting process exceeds the nutrient and reparative ones, while the need or *besoin* for the latter is still felt; the balance between the venous and the arterial circulation is materially modified; and the brain and nervous system are not capable of the same amount of expenditure of functional energy. Can we wonder then that apoplexy and paralysis are so frequent at this age? Not a few between 50 and 60 years of age are carried off by these diseases.

If the system holds out until the next decenniad of life begins, when old age has quieted down the irritability and blunted the overstrained sensibilities of our nature, the bodily health becomes often very strikingly improved, and the remaining portion of life is passed much more smoothly and equably than the ten or twelve years that had preceded the change. The feelings are now much less excitable; the chagrin of disappointed hope or ambition does not sink so deeply; and a certain degree of apathy creeps on, rendering the individual more submissive to the present, and less anxious about the future. In conclusion, we may remark, that the "climacteric disease" is much less frequent in women than in men; indeed, it is scarcely known among the former.* The cause is obvious: the female mind is less exposed to the sources of anxiety and disappointment; and, moreover, it is unquestionably stronger and more patient under affliction than the spirit of the male.

Before quitting this part of our subject, it may be worthy of notice, that the sudden suspension of long-continued anxiety has been known to induce positive Insanity.

*Case.*—A middle-aged gentleman, who had, for upwards of fifteen years, been living on borrowed money in expectation of his father's fortune, at length came rather suddenly into possession of it. His affairs were considerably embarrassed at the time; and, for a year or two before, he had become more than usually anxious about the result. It would seem as if his nervous system had, like a musical cord, been wrought up to the

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* The *life* of a woman at this period—the sixth decenniad—is, in the estimate of life-insurance companies, considerably *better* than that of a man.

highest degree of tension, so that any impression on it would cause it to snap. From the moment that he heard of his father's death, he manifested signs of mental derangement; his ideas running altogether on the subject of his fortune. He fancied that his wealth was boundless, and he was continually offering to write cheques for any sum desired to every person that he happened to meet.

But intense Grief is a much more frequent cause of mental alienation.

*Case.*—An elderly lady, who had concentrated all her hopes and affections upon her grandson,—her only son having died many years before—was doomed to be deprived of this darling of her heart by a sudden epileptic attack: he was found dead in his bed one morning. Within two or three months of his majority, everything had promised good fortune to him, and happiness to his aged relative in witnessing his prosperity. Her grief upon his loss was most overpowering. She sobbed and wept like a child, who had just lost his mother whom it had learned to love and adore. Day after day passed over, and scarcely any abatement of her grief could be perceived. Gradually indeed it became more silent; but then it was too visible that her mind had become shaken in the conflict, through which it had passed. Her only conversation was about her dear boy; she wrote his name on every scrap of paper she could find; and, as she repeated it, she wept afresh. Then she began to believe he was not dead, and that some one kept him away from her. In this sad state, she remained until the mind, becoming more and more weakened, has at length lapsed into imbecility and utter childishness. Such are the effects of loving any earthly object "not wisely, but too well." It would be easy to multiply instances of the withering and wasting influence of intense Grief on the sanity of the mind as well as on the health of the body. Who has not read the touching story of the "Broken Heart" in the Sketch Book?

As a contrast to the slow and more gradual effects of this emotion, we shall now give an instance where they were instantaneous, but less permanent and abiding.

*Case.*—A young lady had the misfortune to lose her husbend at sea, during their voyage from New South Wales to this country. She was pregnant with her first child at the time; and, as there was no other female on board, her condition for nearly three months was most truly distressing. On the vessel arriving in the river, the brother of her late husband went immediately down, and fetched her to apartments which he had provided: we need scarcely say that her grief at meeting was intense. No sooner had she stepped into the room, than she uttered a scream, and would have fallen on the ground, had she not been caught in the arms of the attendants. She was utterly insensible, and in this state continued when a medical gentleman in the neighbourhood was called in. He ordered the hair to be cut off, and leeches applied to the temples: this was between 2 and 3 P. M. I did not see her until about six o'clock; she was still quite unconscious, and could not be roused to answer any question. As the face was pale, and the pulse feeble, I had her at once removed to bed, warmth applied to the feet, and a mustard poultice to the region of the heart: a tea-spoonful of brandy was attempted to be given, but she

could not swallow. There was no symptom of revival, when I left about 8 o'clock. On returning about 11 o'clock, I found her in the same unconscious state, and—judging at least from the state of the pulse—decidedly much more exhausted, and indeed, to all appearance, rapidly sinking. I sat, with two friends of the patient, beside her bed for three hours, expecting her speedy dissolution; the pulse was scarcely to be felt; the breathing was very indistinct; and a death-like pallor was diffused over the surface. About 2 P. M. a change however began to manifest itself. We succeeded in getting a few spoonsful of brandy and water down; and, as this was swallowed, the pulse rose and the skin began to regain its warmth. Between five and six o'clock, she became restless, and every now and then moaned, as if in pain. An examination was made, and the *os uteri* was found to be as large as a crown-piece. From this time, the labour-pains returned with tolerable regularity; so that by 4 P. M. the head was fairly in the hollow of the pelvis. Cephalotomy was performed, and the child extracted: it had probably been dead for 24 or 48 hours. During all this time, the poor sufferer was quite unconscious, save to the bodily pain of childbirth. Fortunately she slept, after the delivery, at intervals, and repeatedly took food. Her consciousness returned gradually; but the mind for several days was dwelling almost continually upon her lost husband, who she would not—every now and then—believe was dead. Her recovery was slow, but ultimately complete. Here then was a case of a condition approaching to that of a *trance*, induced by the outburst of long smothered grief. Any other violent emotion is apt to do the same in females of a highly nervous and excitable temperament. We might adduce many examples in proof of this; but the only case, that we shall mention at present, is one of Cataleptic trance, related by the late Dr. Gooch, and which occurred in a woman a few days after her delivery of a dead child.

* * * * * "She was lying in bed, motionless, and apparently senseless. Her eyes were open; but there was no movement of the chest, no movement of the nostrils, no appearance of respiration could be seen; the only signs of life were her warmth and pulse; the latter was, as we had hitherto observed it, weak, and about 120; her fæces and urine were voided in bed.

"The trunk of the body was now lifted, so as to form rather an obtuse angle with the limbs (a most uncomfortable posture,) and there left with nothing to support it. Thus she continued sitting, while we were asking questions and conversing, so that many minutes must have passed.

"One arm was now raised, then the other, and where they were left, there they remained; it was now a curious sight to see her, sitting up in bed, her eyes open, staring lifelessly, her arms outstretched, yet without any visible signs of animation; she was very thin and pallid, and looked like a corpse that had been propped up, and had stiffened in this attitude. We now took her out of bed, placed her upright, and endeavoured to rouse her by calling loudly in her ears, but in vain; she stood up, but as inanimate as a statue; the slightest push put her off her balance; no exertion was made to regain it; she would have fallen, if I had not caught her.

"She went into this state three several times. The first time, it lasted fourteen hours; the second time, twelve hours; and the third time, nine hours; with waking intervals of two days after the first fit, and one day after the second."

That *religious Enthusiasm* is one of the most powerful of the predisposing or even of the exciting causes of Cataleptic and Ecstatic seizures,

is expressly stated by every enlightened medical writer on the history of nervous diseases. What says Dr. Copland?

"These affections are most commonly excited by * * * * particularly religious enthusiasm: great mental application, and the passion of love; frights, terror, or uncommon dread; the irritation of worms in the primæ viæ; suppression of the menses, of eruptions and accustomed discharges: injuries of the head; concealed mental emotions, and ungratified passions; and disturbances of the uterine function. * * * * * I believe that many cases in females are chiefly exalted or more severe states of Hysterical affection, and more or less connected with disorder of the nerves and circulation in the uterus and ovaria."

Keeping these observations in view, we now request the reader's attention for a few minutes to certain cases of what Dr. Binns calls "Seraphic ecstacy:" their histories are related in a pamphlet published two or three years ago by that pious nobleman, Lord Shrewsbury.

The name of the first of the Earl's wonderful girls is Maria Morl, surnamed the "Estatica." She was born in 1812. In early youth, there was no peculiarity about her; she was like any other girl, only more than usually religious; for she was much in the habit of visiting a church of the Franciscans, near her father's house, for prayer. As she grew up, she became sickly and delicate; but we are not told whether she had ever any epileptic or cataleptic seizure. It was not until she had reached her twentieth year, that she exhibited any signs of Ecstacy; and then, it would seem, the attack returned every time that she received the sacrament. As she usually remained in the ecstatic state for seven or eight hours at a time, her confessor very considerately thought that she would remain longer, if the "host" was given at a very early hour. Accordingly he administered it to her one morning at 3 o'clock, A. M.; she immediately became entranced, and continued in the kneeling attitude of prayer for 36 hours! The priest, then returning, found her in the same position that he had left her in; and he, good man, felt convinced that she might continue so, for the rest of her life, "unless," we use Lord S.'s words, "he should bring it (the ecstatic condition) within limits, by recalling her to herself. He therefore undertook to regulate this state by virtue of that holy obedience, which she had vowed upon entering the third order of St. Francis!" Crowds of people came from the country to see this highly-favoured lady; and indeed such throngs assembled that the authorities of the place thought it necessary positively to prohibit their meeting.

In the course of the next year, a sanguinary spot, like the scar of a recent wound, was observed on the palm of each of her hands. The priest at once predicted that they would prove to be *stigmata; i. e.*, marks corresponding with the wounds of the nails in the hands of our Saviour! Shortly afterwards, two other *stigmata* appeared upon her feet, and, about the same time, one also over the region of the heart. Drops of clear blood frequently flowed from these spots on certain days!

Lord Shrewsbury saw her in one of her trances; she was kneeling, and as motionless as a statue or waxen image. She would have remained in this state for hours; but her confessor partially *detranced* her by a slight touch or word; and straightway she fell back upon her pillow, so as to assume a sitting posture. She was, however, still insensible; and it required her holy father again to address her before she was completely

restored to her senses. On awaking, she looked all sweetness, we are told, upon her priest, and kissed his hands with great emotion. As ill-luck would have it, one of the visitors enquired in her hearing, whether the *stigmata* were visible. No sooner were the words uttered, than she at once "became again transfixed in ecstacy."

Was there ever a more complete case of Hysterical catalepsy in a weak exciteable girl than this instance of what Dr. Binns terms "seraphic ecstasy?" It will be observed that a good many of its features are thoroughly Mesmeric.

Let us now hear something of the "Addolorata of Capriana," another of the seraphic ladies. The girl seems to have been in wretched bad health, and subject to attacks of violent pain. As a matter of course, no exact particulars are given. All that we are told is that, during a paroxysm of severe suffering, "one night her head became encircled by small wounds, 53 in number, which opened and bled profusely every Friday. Fourteen days after the Crown of Thorns, she received the *stigmata* in the hands and feet." This poor creature seems to have been subject to convulsive attacks.

We have little doubt that she, like most hysterical girls, morbidly greedy of sympathy, and fond of attracting notice, was in the habit of pricking her forehead and hands with most religious regularity on the appointed days. Be this as it may, our readers will be amused to read his Lordship's report of her appearance.

"Her hands were firmly clasped over her chest, as one in a state of considerable pain; and her whole frame was convulsed with a short, quick, tremulous motion. The blood was still oozing perceptibly from the wounds in the back of her hands, though the blood and serum, which had flowed from them, did not extend above two, or at most three, inches. Her fingers were so firmly clasped, hat to judge from appearances, she had not the power to loose them; but, on the clergyman, who accompanied us, asking her to let us see the inside of her hands, she immediately opened them from underneath, without unclasping her fingers, as a shell opens upon its hinges; so that we distinctly saw the wounds and the blood and serum quite fresh, and flowing down over the wrist. At our request, he also asked the mother to uncover her feet, which she did, though with some small reluctance; when we found them in the same condition as the hands, with, however, this singular and surprising difference, that instead of taking its natural course, the blood flows upwards over the toes, as it would do, were she suspended on the cross We had already heard of this extraordinary deviation from the laws of nature, and were now happy to have an opportunity of verifying it in person."—*Binns*, p. 232.

Lord S. has quite a sharp scent for the discovery of *estaticas*. He found out another in 1842, near Arezzo in Tuscany. We especially request the medical reader's attention to this case, as it seems to us to be a very good specimen of a not uncommon state in young females.

The favoured individual was another girl, as a matter of course, in wretched health, bloodless, and excessively emaciated—in short, as his Lordship says, "a perfect skeleton." When sixteen years old, she was severely hurt by a fall down stairs, and, from the time of this accident, she was liable to attacks of convulsions. For some years past (before the date of the report,) she had been entirely bed-ridden. When Lord S. visited her, she was lying calmly on her back, her head being slightly

raised, so as to enable her to look, through a grating in the wall, into a small chapel fitted up for her especial service. "At the offertory, she suddenly threw forward the bedclothes, and instantly rose upon her knees with her arms outstretched, and her eyes elevated to Heaven, motionless as a statue. She, who had been bed-ridden for eleven years, and so perfectly helpless that it is with extreme difficulty, as I have just observed, she is moved with the assistance of several persons, and which invariably produces syncope, now sprang into the beautiful attitude in which we then beheld her, with a swiftness, elasticity, and energy, as if a spring of highly-tempered steel were in every joint. She remained in this position for two or three minutes; and, then slowly folding her arms across her breast, she gradually sank again upon her pillow with surprising grace and dignity, and in a manner as unearthly as she had risen. Her mother then covered her again with the counterpane, and she again became conscious of what was passing around her."—*Binns*, p. 241.

Now for the *aerial* phenomena (as they are called by Dr. Binns) witnessed in this poor hysterical girl.

"The chaplain," continues Lord S., "desired me to touch her hand, when the slightest pressure of my finger upon hers made her arm fall several inches, and put her into a swinging motion from side to side. This movement was considerably increased by the same person blowing at her gently with his breath, so exceedingly aerial and unsubstantial is her frame. None of these influences, however, produced the slightest alteration in her attitude, or the least impression upon her senses; her eyes and countenance remaining fixed and immoveable as before, and her arms resting in the same position—only swinging with, and entirely regulated by, the body. Before this motion had entirely subsided, he gently blew at her in front, and she then swung to and fro, backwards and forwards, showing how singularly distinct was the effect of so gentle a breath upon her, the impulse being given according to the direction from whence it came. Gradually the oscillation ceased, and she recovered her balance; when she fell back with the same grace and dignity as upon other occasions, regaining her position upon her pillow with her arms crossed, and was again covered with the counterpane."—*Binns*, 242.

So much for the credulity, in the 19th century, not only of a weak-minded nobleman who is a devoted believer in all the legendary fictions of the Popish religion, but of a learned (?) M. D., who—we may here take occasion to remark—has managed to cram into the space of a single volume a greater amount of absurdity than it has ever been our lot to have encountered before. We need scarcely say that, as long as human nature remains the same, fond of the marvellous and supernatural, and as long as hysterical girls are petted and made much of, so long shall we every now and then have accounts of Miraculous cures, Trances, Dreams, Visions, and so forth.

As a matter of course, much depends on outward circumstances what turn the seizure will take, and how the poor invalid will be affected. While, in priest-ridden Italy, two or three sickly ænemic young women are making people (and perhaps themselves too) believe that they are the chosen instruments of Heaven to shew forth—it is not easy to say what; we find at the very same time that there is, in metaphysical Germany, a *Seeress* of *Prevorst*, whose "Revelations concerning the inner life of man, and the inter-diffusion of a world of spirits in the one we

inhabit," have just been published by Dr. Kerner of Weinsberg. We need scarcely say that these Revelations are full of the wildest and most extravagant nonsense about demons and all sorts of diablerie.

But we have neither space nor inclination to pursue this subject: our only motive for introducing it at all was that of shewing some of the corporeal effects of inordinately excited feelings in the female system. And here we must not omit to remark, that by far the greater number of cases of Trance, Ecstasy, Somnambulism, &c.—whether spontaneous or the result of Mesmeric Manipulations—have occurred in young unmarried females, subject, in almost every instance, to some one or other of the numerous forms of Hysterical disease. We are ready to admit that there are certain points in the history of these psychico-corporeal conditions, that are not well-understood or easily accounted for. Many of the phenomena of Sleep-walking are indeed very strange, nor must we refuse to credit them, because they baffle our attempts to explain their physiology; but certainly we have never yet met with a single indisputable case that would warrant our belief in the alleged existence of Clair-voyance, transposition of the senses, and other unnatural marvels of the Mesmeric Art. Its very advocates have themselves much to blame, by the extravagance and utter senselessness of many of their statements, for not a little of that ridicule and condemnation that have been cast upon it. Witness, for example, the precious production of Mr. Newnham, which we noticed in the last number but one of this Journal.* If medical men commit themselves to such absurdities, we cannot wonder at simple-minded clergymen and barristers floundering about, in the most amusing manner, in a sea, of the ordinary tides and currents of which they are utterly ignorant. No man can be expected to write very rationally on the irregularities of the function of any part, unless he is previously acquainted with its physiology in health, and the changes to which it is liable under the influence of disease; and therefore it is that we can attach but little importance to all the learned labours of the *laity* on the strange and perplexing phenomena of morbid innervation, more especially as they display themselves in hysterical girls. The shrewdest physicians have been puzzled to explain them, and have therefore been content to relate very modestly the facts which they have observed, without attempting to solve or explain them. Cabanis was a man of this description, and it is to him that we are indebted for the following remarks:—

"I think it necessary, here, particularly to call to mind those singular acute maladies in which intellectual faculties are suddenly seen to arise and develop themselves, which till that time had not existed. It has been remarked also, in some ecstatic and convulsive affections, that the organs of sense become sensible to impressions which were not perceived in their ordinary state, and even to receive impressions foreign to the nature of man. I have often observed, among

* We may take this opportunity of alluding to a very judicious and well-written pamphlet by Mr. Vines of Reading, entitled "Objections to Animal Magnetism or Mesmerism, &c. It clearly shows how Mr. Spencer Hall—one of the itinerant professors of the art—utterly failed in his attempts to hoodwink the good people of Berkshire. Touching these perambulating exhibitors, we recommend some very sensible remarks by Mr. Colquhoun to their notice, at page 177 of his new work on Somnambulism.

women who might have been excellent sorceresses, the most singular effects of the changes of which I speak. There are some of these invalids who easily distinguish microscopic objects with the naked eye; others who see sufficiently clearly in the most profound darkness, to guide themselves with confidence. There are those who follow persons by their track, like a dog, and recognise, by the scent, the objects which these persons have used, or which they have only touched. I have seen those in whom the taste had acquired a peculiar delicacy, and who desired or knew how to choose the food, and even the remedies which appeared really useful to them, with a sagacity which is generally observed only among animals. We see others, who are in a state to perceive in themselves, during the time of their paroxysms, either certain crises which are preparing, and of which the termination proves soon after the justness of their sensations, or other organic modifications attested by those of the pulse and by other signs still more certain."

As an illustration of these remarks we shall here adduce the report of a case related by Dr. Darwin, in his Zoonomia. It occurred in "a young lady, who, after being exhausted by violent convulsions, was suddenly affected by what he calls reverie. She conversed aloud with imaginary persons, her eyes were open, but so intently was her mind occupied that she could not be brought to attend to external objects by the most violent stimulants. The conversations were quite consistent. Sometimes she was angry, at other times very witty, but most frequently inclined to melancholy. Indeed it appears that this reverie only exalted her natural versatility of temper and intellect. She sang with accuracy, and repeated many pages from the poets. In repeating some lines from Pope, she forgot a word, and after repeated trials regained it. In subsequent attacks she could walk about the room, and, although she could not see, she never ran against the furniture, but always avoided obstacles. Dr. Darwin convinced himself that in this state she was *not capable of seeing or hearing* in the ordinary manner. It is observable in this case that volition was not suspended; she regained by effort the lost word in repeating the poetry, and deliberated according to the natural habit of her mind; yet, when the paroxysm was over, she could not recollect a single idea of what had passed in it."—*Moore*, p. 103.

The subject of Animal Magnetism naturally enough suggests to the mind the question of Empiricism in general.

What is the cause, we would ask, of so much successful, not to say merely profitable, quackery in the present day? Is it not the vast increase of *malaise*, if not of positive maladies, induced by the highly artificial and unnatural mode of life pursued, and by the consequences of this —inactivity, and self-indulgence? The ready remedy for the pains and aches, and loss of appetite, and indigestion, and vapours, and want of sleep, and so-forth, is to give the patient something to do; and whether this "something" consists in swallowing pills by the dozen at a time, or in taking dainty little globules of sugar at stated hours of the day, avoiding most carefully *this* article of food, and taking most regularly *that* article of drink; or in being pawed at and stroked down by a nice-looking gentleman; staring you most fixedly in the face; or in being galvanised or magnetised, or rubbed, or pummeled, or shampooed; or in being sodden in steam, or soused in cold water—it matters very little, upon the whole; any one of them will do equally well, in a vast number of cases, provided

the fashion and humour of the day will it to be so. Not but that, in many instances, positive and most serious mischief has been done by the use of some of these pastimes—those, we mean, that are really of an active character; as, for example, the Morrisonian and Priessnitzian methods of cure. A good many individuals have been purged to death by the almost incredible quackeries of the Aberdeen linendraper; and we need scarcely say that, in not a few cases of gouty complaints and visceral diseases, the patient has sacrificed his life to the insane fooleries of the German impostor.

But less violent means are, on the whole, much more successful. All ages have had their charms, and amulets, and incantations to cure, as well as to prevent, diseases. And here it may be worthy of notice that many of these consisted, either in whole or in part, of Music and the recitation of Poetry. Hence, indeed, the very origin of the words *charm* (carmen) and *incantation*. Democritus tells us that many diseases may be cured by the sound of a flute, and Asclepeiades employed the trumpet for the relief of *sciatica*, the pain of which, he says, will vanish whenever the fibres of the affected part begin to palpitate! The custom of wearing Amulets has prevailed in almost every age and country; and doubtless the confidence inspired by the practice has not been without its advantage. And when too was the time that Quacks did not exist? "In the opinion of the ignorant multitude," says Lord Bacon, "witches and impostors have always held a competition with physicians." Galen complains in his day that his patients were more obedient to the injunctions of diviners than to his prescriptions; and which of his successors will not say the same? Let us not be unreasonable; Esculapius and Circe were both children of Apollo. Whatever is mysterious will command the faith of the multitude more than what is known. Pliny knew this well when he said; "minus credunt quæ ad salutem pertinent, si intelligunt."

It is certainly a curious fact in the history of Credulity that rational men and women seem to be so often more ready to surrender their faith and judgment to the most unblushing mountebanks than to their regular medical attendants, who dare not exact one half of the penances or penalties which the former may impose at their pleasure. But such has been the case at all times and in all countries; and indeed not in medical matters only, but in those of a still higher importance. Does not the devotee of superstition or of the most idolatrous religion willingly submit, at the bidding of his priest, to the most severe inflictions of bodily suffering, to fastings and scourgings, and even to mutilations of the most terrible kind; while the followers of the pure and simple faith are too generally most unwilling to practise abstemiousness even for a single week, or put the slightest check upon their accustomed indulgences? It is one of the besetting sins of man that, when he is ill at ease either in his mind or in his body, he always seeks to be *doing* a great deal himself for the recovery of his wished-for comfort. He is not satisfied with merely following a calm and continued course of passive discipline, mental as well as bodily—the discipline of temperance, regular exercise, and cheerful contentedness:—he wants the excitement of having something to *do*. He is impatient and cannot wait for slow results and the operation of simple means. He would rather be worse than remain in this stationary con-

dition, making no progress to amendment, and not having that degree of sympathy from friends and attendants which a more serious illness would certainly obtain for him. Now what, pray, is the real state of such a patient?—in point of fact, is it not the mind, rather than the body, that is ill at ease? If *that* were more occupied and engaged with worthy pursuits, and if there was a larger share of cheerful contentedness and religious submission, *this* would inevitably become less sensitive to every passing ache and uneasiness. As long as there is a vacant and selfish mind, so long will there be an ailing and delicate body.

There is an interesting chapter in the history of Diseases, which of late years more especially, when Solidism has unduly prevailed in nosological inquiries, has been far too much overlooked—we allude to the restorative and healing influence of unassisted Nature. Many maladies, we need scarcely say, have a tendency to cease of themselves, after they have continued for a certain time; and, unless some of their symptoms exhibit an unusual severity, or an accidental complication happen to exist, the less that Art interferes with the operations of this *vis medicatrix*, the better. Not to mention the family of the Neuroses, to which our attention has been hitherto almost exclusively directed, we might point to the numerous and important class of the Pyrexiæ for many illustrations. In the treatment of them, it is often quite as useful to know when to do very little, as it is when recourse ought to be had to active medication. The days of out-and-out Broussaism are, thank God, passed; and medical men, even in France, have now found out that a fever is not necessarily an inflammation. The possession of Algeria, if it has not been very useful to our neighbours in a commercial or political point of view, has, at least, had the effect of teaching the medical officers of their army,—and the important lesson has gradually extended itself to the civil practitioners—to abandon many of the principles of their early professional education in Paris, and to have recourse to a more enlightened and successful method of treating the fevers of Africa, which are almost invariably of a remittent or intermittent character. Bark, opium, and wine have, in a great measure taken the place of venæsection and ptisans. In these fevers, it is of the highest consequence to keep up the spirits of the patient; for the state of the Mind has no inconsiderable influence in aiding or in counteracting the effects of the remedies employed for their subjugation. Often has the expected fit of an Ague been observed not to occur, if the attention has been intensely occupied by something of absorbing interest, or if the feelings have been strongly roused by some joyous or alarming intelligence. A mere effort of the mind, a bold resolution, has been known to prevent the expected paroxysms of an intermittent. This, and some other maladies—especially those of a neuralgic nature—not unfrequently seem to be kept up by the mere force of habit or of long-continued repetition: the suffering is expected at a certain time; and as sure as it is looked for, so certainly does it return. But we have already alluded to this subject, and need not enlarge.

There are still many other topics which might be aptly introduced as illustrating the present subject, were it not for the length to which this article has already extended: we shall therefore mention only one or two that first occur to our notice. Might not the many cures that are effected

every year by patients visiting the waters of Bath and Cheltenham, or the Spas of Germany and other places, be adduced, as evidencing the sanative influence of Mind upon Body? We do not mean to deny that the purer air, the more regular exercise, the more temperate meals, and even the imbibition of the medicated waters, have a good deal to do with the invigoration of the health of the invalid; but has not the amusement of the mind, the withdrawal from the carking cares of business or the petty anxieties of fashionable dissipation, and the consequent subsidence of the feelings to a more even and regular flow, *their* share also in the recovery of the jaded appetite, and the relief of the feverish and vexing headache? It is Miss Mitford, we believe, who remarks, in one of her pleasing tales, that whenever we meet with anything to annoy us, the best plan is to put on our hat or bonnet, and walk out into the open air. Admirable remedy! —its good influence we often feel in our own experience. Whether it be in town or country, we are sure to meet with something out of doors to engage our attention, and withdraw us from ourselves and our own vexations and troubles. If we chance to see some sad victim of poverty or disease, in our walk along the street, are we not involuntarily led to compare his condition with our own, and thus to gain a lesson of more submissive equanimity? And where is the man who can look upon the ever fresh beauties of Nature in the fields, and hear its sweet sounds, and muse on the wonders of Creative skill and goodness around him, without finding some mitigation of his aches and troubles, if it be but for an hour?

And then, how many of the maladies of civilized life arise from sheer inaction, and the utter want of proper exercise either of mind or body! In a large metropolis like this, a vast number of ladies sometimes will not leave the house for a couple of weeks at a time, although their health may be perfectly good all the while. They may not indeed suffer the evil effects of this inaction at the moment; but ere long, if a change be not made, they infallibly become the victims of loss of appetite, constipated bowels, irregular menstruation, leucorrhœa, and such like maladies. And such is the reciprocating and mutually-reacting influence of body and mind, that an almost inevitable accompaniment of such disordered health is some unamiable change of the Temper. It would be easy to prove this by a variety of examples, and to show how deeply the character, moral as well as mental, is apt to be modified by various maladies that flesh is heir to. The whole work of Cabanis is devoted to the illustration of this very subject, and full of interesting matter it is. We must pass it by at present; for our business is rather to exhibit the influence of Mind upon Body, than of Body upon Mind. But then it may be said, has not the *temper* much to do with the mitigation or aggravation of many maladies? Yes, most assuredly; no one can dispute the fact; for it meets us at every step, and we observe it in patients of all ages. The irritable and passionate child suffers tenfold more in Laryngismus Stridulus and in Pertussis than its fellow of a milder disposition. The importance (in a mere physical point of view) of not indulging children's appetites and inclinations, or giving way to their wayward likings and dislikings, cannot be too much insisted upon. Whoever has seen much of practice in children's diseases, must know well the marked difference as to their obstinacy and duration in different in-

dividuals :—arising too, chiefly from the unmanageableness of some compared with others. Too often we have a double disease to contend with—the malady itself; and the feverish irritability aggravated every time that any medicine is administered.* This remark applies in a more especial manner to the case of cerebral and laryngeal disorders; and not in childhood only, but in riper years, when it might be reasonably expected that the judgment would exercise more control over the fretfulness of the temper. How often have we seen patients labouring, for example, under an attack of Asthma—in place of being quiet and resigned, striving to moderate the dispnœa by regularly-repeated acts of as deep inspiration as possible—restless, tossing about from one position to another, now drawing in a deep breath and next moment expelling all the air in the lungs by loud groans and murmurings. Any one, who has been squeezed up in a crowd, knows full well that, if he is at all impatient or quarrelsome, he becomes short-winded, and begins to feel all the horror of impending suffocation. The only plan is to keep quiet, and breathe as evenly as he can. So it is with the poor Asthmatic, during an access of his malady. Medicines are generally of little avail in shortening or relieving it; the chief reliance must be on the exercise of patient endurance. What we have said of Asthma is applicable, in a greater or less degree, to all diseases of the respiratory organs: their severity depends very materially upon the *patience* of the sufferer. The progress of even a disease like Phthisis is often retarded, in a very striking manner, by a spirit of sustained equanimity and resignation. We need scarcely say that it is only the blessed influence of Religion that can impart this inward grace of character. Some years ago we witnessed a beautiful example of this, in the person of a working man. Three years before his death, we ascertained the existence of tubercular disease of the lungs. The course of the malady was most slow and progressive; not a murmur nor sign of impatience was ever manifested by the invalid during the whole time: we always found the Bible open before him. The unusually rapid course, on the other hand, of some cases of Consumption is unquestionably owing, in part at least, to the constant feverishness that is kept up by the irritability and disquietude of the patient's mind.

In drawing these remarks, on the influence of the Mind upon the Body, to a close, we may be permitted to quote a passage from the review of an interesting paper on "Moral Therapeutics," by the accomplished Secretary of the Royal Academy of Medicine in Paris, contained in the Number of this Journal for October, 1841.

"There cannot be a doubt but that psychological causes of disease are too apt to be entirely overlooked in the present day, and that physicians, in their minute examination of all the physical symptoms of a malady, often neglect the influence of mental emotions on its development, its progress, and its termination. 'If a patient dies,' says M. Reveillé-Parise, 'we open his body, rummage among

* It is often asserted that the treatment of the diseases of infants and children is much more difficult than that of adults, in consequence of the former being unable to explain their disordered feelings so well as the latter. True; but then there is not the perturbing influence of mind and feelings in the one case to baffle and counteract the operation of our remedies. There may be *temper:* but the effects of that are very different from those of fear, anxiety and so forth.

the viscera, and scrutinize most narrowly all the organs and tissues, in the hope of discovering lesions of some one sort or another; there is not a small vessel, membrane, cavity, or follicle, which is not attentively examined; the colour, the weight, the thickness, the volume, the alteration, nothing escapes the eyes of the studious anatomist. He handles, touches, smells and looks at every thing; then he draws his conclusions one way or the other. One thing only escapes his attention; this is, that he is looking at merely organic effects, forgetting all the while that he must mount higher up to discover their causes. These organic alterations are observed, perhaps, in the body of a person who has suffered deeply from mental distress and anxiety; these have been the energetic cause of his decay; but they cannot be studied in the laboratory or in the amphitheatre.' * * * * * 'Many physicians of extensive experience are destitute of the ability of searching out and understanding the moral causes of disease; they cannot read the book of the heart; and yet it is in this book that are inscribed, day by day and hour by hour, all the griefs, and all the miseries, and all the vanities, and all the fears, and all the joys, and all the hopes of man, and in which will be found the most active and incessant principle of that frightful series of organic changes which constitute pathology.'

"This is quite true,—whenever the equilibrium of our moral nature is long or very seriously disturbed, we may rest assured that that of the animal functions will suffer.

"Many a disease is the *contre-coup*, so to speak, of a strong moral emotion; the mischief may not be apparent at the time, but its germ will be nevertheless inevitably laid."

It only remains for us now briefly to notice the general character of the books, whose titles we have prefixed to this article. The work of Dr. Moore contains a good deal of interesting information, and is imbued throughout with an amiable and enlightened spirit of religious feeling. That of Dr. Binns is utterly unworthy of any man of education: doubtless it is intended for the eye, not of medical men, but of the reading public; and probably the Doctor has had his reward. The attempt to impose upon the credulity of people by pretending—at a personal sacrifice too!—to communicate a ready means of procuring sleep at any time, is truly disgraceful on the part of a regularly qualified physician. The work of Dr. Boismont, on the subject of Hallucinations, is almost entirely occupied with the relation of cases illustrative of almost every sort of monomaniacal delusions. It may therefore be regarded rather as a *Catalogue Raisonnée* of reports, than as a treatise upon the subject. It is unnecessary to say any thing of the "Rapports, &c.," of Cabanis, originally published at the beginning of the present century, further than to recommend the present edition to the notice of our readers: it is very complete, and at the same time most reasonable in price. Mr. Colquhoun's new publication is a curious one. Besides the seven lectures of Dr. Wienholt, translated from the German, there is a long Preface and Introduction denunciatory of medical men for their ungenerous opposition to the claims of the noble science of Animal Magnetism, and also an Appendix, in which there is ample reference to (what Mr. C. considers) indubitable cases of Clairvoyance, &c. The lectures of Wienholt were published upwards of forty years ago; and it is not very obvious what could have induced the learned advocate to have disinterred them from their quiet repose. They are full, as might be expected, of that German spirit of most unsatisfying disquisition which leaves the reader at the close just about as wise as he was

at the commencement; reminding us more than once of the witty Frenchman's remark on a similar subject; "plus il y a de raisonnement, moins il y a de raison." One of the strongest arguments adduced by him is this, Bats can guide themselves when their eyes have been scooped out as well as when they had them, poor creatures, in their heads; and Cats and Owls can see not only as well, but even better, in the dark than in the light. Here then are proofs—that the faculty of Vision in animals is not confined to the eye-balls! Why then should it necessarily be so in the human being?—more especially when we call to mind the numerous examples where Somnambulists have been known to see objects, although their eyes were perfectly closed at the time. This seems to be the drift of the author's reasoning. The only remark that we shall make is, that it certainly seems rather strange that the Creator should have made a special organ for sight, if animals can see as well without as with it.

The learned translator dwells forcibly upon what may be called a spiritual view of the question, and appeals to the writings, not only of metaphysicians, but also of St. Paul, in confirmation of his views. The following passage from Dr. Reid is deemed so conclusive by him that it is actually printed in capital letters throughout.

"We have reason to believe, that when we put off these bodies, and all the organs belonging to them, our perceptive powers shall rather be improved, than destroyed or impaired. We have reason to believe that the Supreme Being perceives every thing in a much more perfect manner than we do, without bodily organs. We have reason to believe that there are other created beings endowed with powers of perception more perfect and more extensive than ours, without any such organs as we find necessary."

The quotation which he adduces from Scripture, in support of his doctrine, that perception may exist independent of any bodily organs, is, to say the least of it, any thing but happy for his orthodox theology. After citing the well-known verses from the first Epistle to the Corinthians—"there are celestial bodies, and bodies terrestial;" and again, "it is sown a natural body, it is raised a spiritual body,"—he adds: "Man, in short, is composed of two different natures—the physical or corporeal, and psychical or spiritual. In our present state, these two natures are conjoined; in the future state, the soul or spirit will be disembodied, and our knowlege, instead of being acquired through the instrumentality of material organs, will probably be derived from immediate intuition—the product of pure consciousness." Is not this conjecture somewhat at variance with the scriptural doctrine of the Resurrection of our *real* bodies?

By the by, M. Colquhoun is very severe againt Dr. Elliotson and his friend Dr. Engledue for their materialist and infidel opinions. He seems to regard the former of these gentlemen as altogether very shallow in his mesmeric, as well as in his other attainments. "The learned doctor," he remarks, "is continually carried off his feet by every novelty—his mind (if any mind he has) is eminently disqualified for philosophical research—when he happens to get hold of any truth, he seems incapable of making a right use of it:—he seems incapable of distinguishing truth from illusion. A considerable part of his letter (appended to Dr. Engledue's very absurd address to the Phrenological Association) is taken up with an

account of certain experiments in that new *bastard science* called Phreno-Mesmerism, of which he speaks in terms of the most rapturous delight." This language (and there is more of it in a similar strain) is surely very unbecoming, applied to a man of Dr. Elliotson's intellectual powers. That he has erred, and erred very grievously, in giving currency to materialist views in his physiological writings, we readily admit; but there are many points in his character that deserve praise. He is sincere and ingenuous, and withal courageous and unhesitating in the avowal of his opinions.

Whether Mr. Colquhoun's mind is "eminently qualified for philosophical research," we shall leave the reader to judge for himself, after he has read what may be called the peroration of the appendix to these lectures.

"If we admit the transposition of the poles of sensibility in somnambulism, by which the central point of the sensitive life is transferred from the brain to some other organ, it is not clear why, as in metastatic affections, sometimes one, sometimes another organ, but always that most susceptible of disease, is attacked—so, in the case of somnambulism, a different organ of the nervous system—especially that most susceptible of zoomagnetic action—may not be elevated to the dignity of an organ of the soul. If we once assume, so to speak, a *metempsychosis* in the sphere of our own body, (without which, do as we will, we cannot attain to any physiological principle in this matter,) then, under certain conditions, any part of the nervous system may become an organ of the soul, viz, always that part which is most excitable; and the organ of the soul can thus be transferred out of the central part of the brain into a peripheric part of it, as into the great ganglionic *plexus* of the abdomen, or into any other ganglion, provided this part of the nervous system stands in the relation of a centre, although in a lower sphere, in subordination to the brain—that is, provided it be really a ganglionic the physiological sense. Hence, perhaps, a difference might take place between male and female somnambulists; seeing that in the latter, in consequence of the greater activity of the abdominal ganglions, even in the normal state, most nervous diseases are reflected, and somnambulism, also, most frequently developed in that sex."—P. 200.

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I. TRAITÉ CLINIQUE ET PRATIQUE DES MALADIES DES ENFANS. Par MM. *Rilliet* et *Barthez*. 8vo. pp. 2370. Paris, 1843.

A Clinical and Practical Treatise on the Diseases of Children. By MM. *Rilliet and Barthez.*

II. MANUEL PRATIQUE DES MALADIES DES NOUVEAUX-NÉS ET DES ENFANS A LA MAMMELLE. Par *E. Bouchut*. Small 8vo. pp. 610. Paris. 1845,

A Practical Manual of the Diseases of New-born Infants and Children at the Breast. By *E. Bouchut.*

[Second Notice.]

OUR readers will recollect that MM. Rilliet and Barthez arrange the diseases treated of in their important work in eight classes, Inflammations, Dropsies, Hæmorrhages, Gangrenes, Neuroses, Fevers, Tuberculizations

and Entozoaires. The four first of these we have already examined; and now proceed to analyse the most important facts relating to those which remain.

## CLASS V.—NEUROSES.

The nervous affections most commonly observed in childhood are denoted especially by a perversion or abolition of muscular contractility, and those here treated of are mostly of a convulsive character. They are *Pertussis, Spasm of the Glottis, Convulsions, Chorea, Contractions,* and *Essential Paralysis.* All these diseases, in their uncomplicated state, agree in being devoid of fever and of pain; some of them being intermittent, and others continued, but with exacerbations. Complications with other diseases, or with each other, are however, very frequent, and much modify the progress and results of these affections.

### *Pertussis.*

This disease is excellently described in both the French works under review, but, without going into the detail, we may extract a few observations from that of MM. Rilliet and Barthez.

*Auscultation.*—"The complications are for the most part seated in the lungs, and as the bronchitis and pneumonia are recognised by the rapidity of pulse and respiration, and the auscultatory signs, it is quite necessary to examine the little patients daily in the *interval of the paroxysms.* In fact, if the ear be applied at the instant of a paroxysm, indep ndently of the material obstacles offered by the resistance of the child, no respiratory murmur is heard, and we can only perceive the anormal resonance of the cough. If we auscult during the hooping inspiration which succeeds the interrupted expirations, the respiratory murmur is not heard either, the air not penetrating beyond the larger divisions of the bronchi. It is then quite necessary to examine the child at a period somewhat remote from the fit of coughing; care must be taken also to count the pulse and respirations some time prior to, or subsequent to, a paroxysm, for we have almost always observed an acceleration of the pulse and breathing to occur a little while prior to the paroxysm, and to persist for some time after its termination."

*Complications.*—These may be arranged under three heads. 1. Those which belong to the nature of the disease, as convulsions and spasm of the glottis. 2. Those which depend upon its locality, as bronchitis, pneumonia, hæmorrhages, and tubercles. 3. Those which are mere coincidences as pleurisy, meningitis, eruptive fevers, &c., &c, *Convulsions* are by no means a rare complication, especially in young children, and, occurring during the paroxysmal stages of the affection, add much to the gravity of the disease. *Bronchitis,* as all know, is a very common complication, being attended with dilatation of even the smallest bronchi. *Lobular pneumonia* also is a frequent complication, often co-existing with the bronchitis. MM. R. and B. do not regard *Emphysema* as one of the complications, never having found it, except when the patient has succumbed to pneumonia or bronchitis, and not always then: and never so considerable as when these inflammatory affections existed without pertussis. Indeed they regard the

repeated expirations, followed by the prolonged spasmodic inspiration of hooping-cough, expelling the air, and then opposing its free re-admission, as unfavourable to the production of emphysema; while the dilatation of the bronchi observed results solely from their inflamed condition. M. Bouchut, however, states that emphysema is frequently met with. Of *Hydrocephalus* and *Anasarca*, stated by Frank and Lombard as complications, the authors speak with just scepticism. *Epistaxis* is not uncommon, but is a mere mechanical effect of the violence of the paroxysm; and the *Hæmatemesis*, reported by some authors, has resulted from the regurgitation of the blood from the nares into the stomach. The deposition of *Tubercle* in the lungs and bronchial glands is by no means an uncommon consequence of pertussis.

In reference to the influence the complications exert upon the progress of the disease, MM. R. & B. observe that this is very uncertain. When the complication is very grave the fits often diminish in intensity; but when this occurs only at a late period, it is often difficult to determine whether the disease has not become modified independently of its influence. M. Bouchut, however, following M. Trousseau, states that, intercurrent febrile affections exert a marked effect in diminishing the force of the disease, or curing it. "If they cause the patient to run some risk, by a happy compensation they moderate the symptoms of the principal disease." Among such affections he enumerates variola, acute catarrh, pneumonia, enteritis, meningitis, dental fever, vaccination, and *gourmes*. Complications are oftener observed in infants at the breast than in older children.

*Diagnosis.*—This, in the great majority of cases, is easy enough, except in the very early stages. Still, as MM. R. and B. observe, there is a paroxysmal form of bronchitis which may be mistaken for it, and we do not doubt its having been so, will explain many of the examples of reputed second attacks of pertussis. M. Bouchut places the diagnostic marks in the simplest manner by stating that in this bronchitis there is no hooping inspiration, no vomiting after the fit, and hardly any expectoration, while there is well-marked fever, which is rare in pertussis. *A tuberculous state of the bronchial glands* is also attended with a paroxysmal cough difficult to distinguish from hooping-cough. When pertussis is not readily cured, its third stage, or rather the dilated bronchi it has given rise to, may lead to symptoms hardly to be distinguished from *phthisis*, except by the result of the case.

*Nature.*—"While admitting that the nervous element plays a great part in pertussis, we cannot but believe that there is something in it beyond a mere lesion of innervation. A singular neurosis it is in fact, susceptible of transmission by contagion, prevailing epidemically, and attacking the same individual but once. The hooping-cough seems to us to at once partake of the characters of eruptive fevers and of those of convulsive diseases. Like the eruptive fevers it is contagious, epidemic, attacks children specially, is not subject to return, is preceded by a period of incubation, and by a precursory stage. Like convulsive diseases and simple neurosis, it is characterised by the marked intermission its principal symptoms undergo, by their special form, and by the absence of febrile action and anatomical alterations. It might be well termed a specific neurosis. It is a disease without an analogue, and if we wish to assign its place in the nosological

list according to its affinities, it must be placed between the neuroses and the eruptive fevers."

*Treatment.*—There is sound sense in the following advice given by Rilliet and Barthez :—

"Before enumerating the medicinal substances fitted to fulfil the indications the various stages of the disease furnish, we ought to advertise the practitioner that he will often find hooping-cough to be tedious, and resisting the best-devised plan of management. He must scarcely expect to find the disease cut short by his treatment, and the object he should have in view should be, not so much the abridgment of its total duration, as the diminution of its intensity and the prevention of its complications. Let the therapeutical agents be so managed that the most active shall not be those commenced with; replace certain medicines in a skilful manner by others, and in the employment of debilitant measures have a regard to the future—such are the councils whose utility can scarcely be too much insisted upon."

The early stage is to be treated as catarrh, not having recourse even to leeches unless positive inflammation arises. In the convulsive stage, *flour of sulphur* in doses from one to two grs. every two hours in milk, was recommended by Kopp, and has been found useful by Jadelot. Dr. Lombard speaks highly of the *carbonate of iron*, from 18 to 30 grs. being taken in the twenty-four hours. The *oxide of zinc* (in doses from 1 to 3 grs. according to the age of the child) has been found very useful by many; and, among others, M. Guersant speaks highly of it in very young subjects, increasing the dose to 15 or 20 grains. *Emetics*, given occasionally, have been recommended by all authors, and even very young children bear them well. Among the narcotics *belladonna* has been extravagantly praised by the Germans: but the French practitioners seem to have a much less high opinion of its deserts. M. Trousseau finds it most useful when combined with opium and valerian. M. Guersant attaches much importance to the use of *hemlock*, combining it with equal parts of belladonna and of oxyde of zinc, and giving ½ gr. of the compound three times a day, to begin with. Both MM. Rilliet and Barthez and M. Bouchut discountenance the use of *revulsives*, such as blister, stimulating embrocations, &c. When any important complication occurs the peculiar treatment of the hooping-cough must be suspended, and the new disease treated upon general principles.

Passing by the chapter upon *Spasm of the Glottis*, or *Laryngismus Stridulus*, which is scarcely recognised in France as a distinct disease, we may extract a few observations upon

*Convulsions.*

"For a great number of years convulsions and worms enjoyed an entire predominance in the medicine of childhood: but in proportion as pathological researches have extended, and the nosological table has been enlarged, so has the influence of these two morbid conditions been esteemed of less account. At present, the re-action has been even carried so far that many authors deny to convulsions the title of a disease, regarding them as a symptom common to many different affections. The same considerations which determine us to give a particular description of contraction of the extremities and essential paralysis, engage us to devote a chapter to convulsions. We shall see, in fact, those affections

are symptomatic of a well-determined disease of the brain, sympathetic of a particular condition of the economy, or, lastly, they are primary, or at least in the present state of science, not referable to any pathological cause. So with convulsions, we shall find them sometimes resulting from an appreciable cerebral disease, at others, developing themselves spontaneously, or in the course of affections of a very different nature, without our being able to establish any relation between the prior disease and the convulsion, and without pathological anatomy revealing any lesion of the encèphalon appreciable to our senses. In a practical point of view we must insist upon the following divisions, which are capital. 1. Convulsions without lesion of the brain, primary, or sympathetic of another affection. 2. Convulsions symptomatic of lesions of the cerebro-spinal organ."

Of the 60 cases collected by MM. R. & B. in children, from 15 months to 11 years of age, in 35 instances the attacks were symptomatic (21 boys and 14 girls,) and in 25 instances (15 boys, 10 girls,) they were sympathetic. In the first, the convulsions marked the onset of the cerebral disease in 16 cases. In the other category they manifested themselves at the early stage only four times. Of 41 cases, occurring in children at the breast, observed by M. Bouchut, the convulsions were sympathetic or essential in 27, symptomatic of material cerebral lesion in 14. Of the 27 cases, 15 occurred during perfect health, and were all cured; and 12 occurred during the course of severe diseases, of whom 7 died, only one offering any cerebral lesion.

*Of the Diagnosis of these various causes* MM. R. and B. thus speak:—

"You are called to a child suddenly seized with convulsions. He is from one to six years of age, strong, robust, sanguine; the attack has followed a sudden fright, a blow, a fall, an indigestion; *i. e.*, some appreciable occasional cause. What is the affection he is suffering from? You are in doubt whether the convulsion is primary, sympathetic, or symptomatic, or whether it is not a prelude to epilepsy. If the child was quite well, if the determining cause is well made out, if the constitution is good, and the fit not violent, you may suspect it is a primary or sympathetic convulsion, or an attack of epilepsy. You examine with care the various organs, and after you have assured yourself that there exists no symptom of pneumonia, pleurisy, &c., you hesitate only between deciding it to be a convulsive or epileptic attack, and are obliged to trust to the future for the solution of this doubt—acting in the mean time according to the urgency of the case, just as if you had to do with a case of simple convulsion. Suppose at the time of the attack the child was already suffering from severe disease, as pneumonia, pertussis, &c. In this case the convulsion is evidently sympathetic of the visceral lesion, is it at the same time symptomatic of brain disease? In the great majority of cases you can be certain it is not so. The brain suffers sympathetically, and not from any disease of its own substance which need cause you new alarm. But this is very different from saying that the convulsion is not dangerous.

"But it is quite different when the convulsion attacks a child the subject of a chronic disease. If you are informed that for weeks or months the child has been losing flesh, colour, and strength, has had a capricious appetite, irregular digestion, or vomitings; if you learn that its parents were phthisical, or that it has been brought up in hygienic conditions fitted for the generation of tubercular disease; then, although the convulsion may even be the result of an appreciable occasional cause, you must fear that the attack is but symptomatic of some grave cerebral affection, and deliver an unfavourable prognosis accordingly.

"If the child is more than ten years old the diagnosis is much easier; for it

is very rare at this age for convulsions to be sympathetic or essential; and they are for the most part symptomatic of a disease of the brain, or constitute a first attack of epilepsy."

Upon the influence of *congestion* we have the following remarks:—

"Some authors have stated that eclampsia is always connected with a congestion of the brain or spinal-marrow. We repeat now, what we have already said concerning cerebral congestion, that it is often difficult to decide whether the hyperæmia has preceded or followed the attack, or whether it has coincided with it. In some cases we have found no trace of congestion, besides which, eclampsia may depend upon an anæmic state of the encephalon. What can we conclude from such contradictory facts, but that congestion plays but a secondary part in convulsions.

"In this respect we partake of the opinion of the authors of the *Compendium*, who, after stating that, in most subjects who have died from convulsions, we find traces of congestion, inquire whether these lesions are cause or effect, and pronounce themselves in favour of the latter opinion. Nevertheless, we do not mean to state that this is always the case, and we can easily conceive that a sudden congestion may produce a convulsive attack, just as we see this phenomenon result from an effusion of blood into the cavity of the arachnoid or the substance of the brain. But we maintain that frequently things come to pass in another manner; and besides the hyperæmia, there is a lesion of innervation which is the proximate cause of the phenomenon. The solution of this problem is not a mere matter of curiosity. Practitioners have in fact but too great a tendency to treat all convulsions by bleeding—a practice sometimes useless, and often fatal."

*Treatment.*—In accordance with the above principles, MM. R. & B. restrict bloodletting to the cases—1. When the convulsions are primary, the child robust, the fit violent, the face violet, the pulse small, or asphyxia or coma imminent. 2. When sympathetic convulsions, offering the same intensity, occur at the commencement of an inflammatory affection. 3. When the sympathetic convulsions are developed during the convalescence of an acute disease in subjects but little debilitated, or in the course of a neurosis. Where venæsection is inconvenient, leeches, varying from two to fifteen, according to the age of the child, may be substituted, applying them to the temples or mastoid processes when much blood is required; or to the anus or malleoli, as recommended by M. Chauffard, when a derivative effect rather is sought. MM. Dezeimeris and Trousseau have particularly insisted upon the benefit to be derived from *compression of the carotid arteries*.

"M. Trousseau confines the employment of this means to cases of what he terms congestive convulsions, and in which the movements are perverted, especially on one side only. He advises compression to be made in the interval which separates the sterno-cleidoieus from the sides of the larynx, for at this point the vessel is free, and it is easily flattened against the vertebral column. The compression is made with the thumb or index finger and the middle finger. The finger is placed parallel to the axis of the vessel, or perpendicularly, having the palm of the hand turned outwards so as not to compress the trachea or larynx. The compression of the carotids would prove hurtful rather than beneficial in convulsions occurring in anæmic children."

Derivatives to the extremities are highly useful, but in employing blisters or sinapisms we must never forget to watch their topical effects, since the

loss of sensibility prevents any manifestation of suffering; and deep ulcerations, &c., have resulted from the neglect of this point. Purgatives, and, if the stomach is loaded, Emetics, are useful. The *oxide of zinc* has been highly spoken of as an anti-spasmodic, and M. Brachet unites henbane with it. A prolonged tepid bath is one of the best anti-spasmodics. *Narcotics*, as opium, must in children be most guardedly employed, and are only adapted to cases of long continuance and attended with sleeplessness, or such as result from painful accidents, &c. *Tonics* are required in anæmic subjects. Free exposure to the fresh air, or placing the child quite naked upon a marble table, has frequently dissipated a convulsive attack.

*Treatment of Chorea.*

MM. R. and B., after examining the claims of the four classes of remedies, anti-spasmodics, narcotics, purgatives and tonics, and insisting that, to be useful, each must be adapted to the indication of the particular case, and not administered, as is too frequently the case, promiscuously, present us with the following *résumé*, which we extract as an example of the recapitulation of heads of treatment with which they terminate each chapter of their work.

"A. A child seven years of age, habitually enjoying good health, muscular and sanguine, has been, during a few days, the subject of a chorea of moderate intensity. There is no complication, and all the functions are executed in a normal manner. Prescribe—1. A tisane of infusion of orange and lime leaves. 2. A sulphureous bath (this has in several cases been found rapidly curative) daily. 3. Light aliment, avoiding wine, coffee, and all excitants, and maintaining every hygienic precaution. If in about a fortnight there is no amendment, we may substitute an infusion of valerian for the orange tisane, and give, three times daily, a powder composed of four grains of oxide of zinc and 12 grains of sugar. If at the end of a month or more there is not amelioration, and the child becomes thin, we must employ the treatment next to be mentioned. B. A child who is weakly, with delicate skin and puny limbs, has been for several days the subject of an intense chorea. Prescribe—1. A tisane of chenopodium, of hop, little centaury, of gentian, or of quassia. 2. Give from one to three of the following powders: ℞. Iron filings, gr. ij., Ext. opium ½ to ¼ gr., Dry Ext. of Bark, gr. iv. 3. Three sulphureous baths per week. 4. Good diet. 5. If the case is tedious, substitute carbonate of iron, for the powders. C. A child of ten years old is attacked by an intense chorea, which allows him rest neither by night nor day. The case has resisted the preceding treatment. Prescribe—1. The infusion of valerian as a tisane. 2. Three of the following pills, increasing their number according to their effects: ℞. Ext. Opium, Ext. Belladon. āā gr. iv.; Thridace, gr. 6; Powder of Mallows, q. s.; divide into 14 pills. 3. Give a purgative composed of calomel and jalap every four or five days. 4. A warm bath every third day. 5. Severe regimen."

We think that a smaller proportion of the simpler cases would prove rebellious if the authors made a larger use of purgatives, which they seem to reserve only for the obstinate ones. But the prejudices in France prevent this means ever having had a fair trial. On the other hand, we are certain the English practitioners do wrong in making no use whatever, in any affection, of any of the multitude of *tisanes*, used far too abundantly though they be by our neighbours.

*Contraction of the Extremities.*

Twenty-three cases of this affection form the basis of the author's observations. It usually commences by a flexion of the fingers, which are also separated from each other and bent over the thumb. The wrists, and occasionally even the elbows, are also flexed; and when the affection is intense, the muscles acquire great rigidity, and the parts cannot be straightened without much force and pain. After a while the toes and feet become in like manner influenced. This affection is most likely to be mistaken for contraction, which is symptomatic of disease of the brain; but is chiefly distinguished from it by the rarity of accompanying cerebral symptoms (such as convulsions, strabismus, dilatation of pupils, &c.) preceding the contraction; by absence of irregularity of pulse; by being binary, and commencing in the fingers and toes instead of the knees and elbows; and by being remarkably intermittent. The prognosis is unfavourable, but this arises from the fact that the disease usually appears in the course of severe maladies, as pneumonia, bronchitis, enteritis, &c., which have produced debility, or this has been induced by onanism, or unfavourable hygienic circumstances. If the disease is treated by bleeding, revulsives, &c., it becomes much aggravated. Anti-spasmodics must be resorted to, in addition to the means proper for combating the stage of the affection, during which it has become developed.

## CLASS VI.—CONTINUED FEVERS.

Under this term MM. R. & B. recognize febrile affections, which are not interrupted by intermissions, and which are anatomically characterized by a phlegmasia of the mucous membranes or of the skin, and whose point of departure is a general morbid condition, which probably results from some peculiar modification of the blood. Of this class of affections, however, the authors confine themselves to noticing *typhoid fever, small-pox, scarlatina and measles.* In typhoid fever the cutaneous eruption is not well marked as in the other forms of disease; but even in the eruptive fevers, the affection of the skin is far from always following a regular course, and in some cases does not appear at all. The affection of the mucous membrane is also more intense and more constant in typhoid than in the eruptive fevers—the cutaneous phlegmasia being the predominant symptom in the latter, the mucous phlegmasia in the former. Upon the *complications* we have the following remarks:—

"These constitute in fact one of the most important portions of the history of continued fevers, and should especially engage our attention. They are numerous and should be placed under three heads. 1. Some depend upon the phlegmasia of the skin or mucous membrane itself, and the inflammatory element which doubtless belongs to these diseases. Such are all the acute inflammations which are induced, and certain dropsies which result from the perturbation of the functions of the skin and probably of the serous membranes. Thus we find bronchitis, pneumonia, anasarca, in fact the greater part of the affections which we have described in our first volume. 2. Those affections which we presume depend upon the intimate nature of fever, or rather of the lesion of the blood, as hæmorrhage, gangrene, and much more rarely, tuberculization. 3. Intercurrent diseases, which cannot be regarded as dependent upon the continued fever, but

which, developed under other influences, complicate it and aggravate its prognosis. In this division certain phlegmasiæ, some dropsies, and especially the eruptive fevers themselves, are found. It is curious to observe how these diseases complicate each other, the same child simultaneously presenting a scarlatina and a rubeola or a variola. In this class of cases we must carefully distinguish the eruptive fevers which succeed each other from those which exist together. In the first case they may pursue their periods regularly; in the second, they become habitually irregular. But if the eruptive fevers complicate each other frequently, it is not so with regard to typhoid fever. It is extremely rare to see this disease developed at the end of an eruptive fever, which on its part never occurs during the febrile period of the *dothienenteritis*.

"In the study of complications we can judge of the reciprocal influence of continued fevers and of the diseases which arise during their course. We shall find, in the following Chapters, that these secondary affections have their special marks; and it is not useless to seek what is the influence the eruptive fevers exercise upon the diseases during the course of which they appear. Now their effect is almost invariably that of aggravating those which appertain to the class of their habitual complications, while they may arrest the progress of such as do not belong to this. If, however, they do not cure them they in no-wise modify the evolution of the local lesion."

### *Typhoid Fever.*

This disease is represented by the authors as a very common affection in children; and many cases described by English authors as inflammatory affections of the abdominal canal with typhoid symptoms, and others described as remittent fever, are really examples of it. The most characteristic *lesions* are—(1,) an inflamed state of the patches of *Peyer's* glands, which are softer, and much less disposed to pass into a state of ulceration, than in the adult; (2,) an enlarged state of the mesenteric glands; and, (3,) a tumefied state of the *spleen*, which, however, the authors represent as of far less frequent occurrence than M. Taupin states it to be. In 44 cases they found this organ considerably tumefied in 10, and slightly so in 8; but Taupin found it considerably enlarged in 109 out of 121 cases! Resolution of the inflamed patches has been frequently observed in examinations made at an advanced period of the disease. In only 15 out of 111 cases recorded were ulcerations found to exist.

We need not enumerate the *symptoms*, but may advert to what the authors say concerning the cutaneous *eruption*. This consists of small, round, flattened papulæ, disappearing on pressure, situated especially upon the abdomen, chest, and upper part of the thighs, and generally appearing between the 6th and 12th day, sometimes earlier, sometimes later. In most cases they are few in number, rarely amounting to 10 or 20 patches. They are not found in about one-third of the cases, and are sometimes seen in enteritis. The more severe the disease the less abundant are the spots in general, and *vice versâ*. Some time after the appearance of these spots, numerous *sudamina* manifest themselves, being especially found at the sides of the neck, but not usually continuing very long.

The authors admit the difficulties of the *diagnosis* of this disease from some cases of gastritis, enteritis, pneumonia, and meningitis, especially of enteritis. After detailing the distinctive marks at length, they observe—

"It results then from our comparison, that in certain cases it is impossible to distinguish typhoid fever from enteritis—a conclusion very different from that

arrived at by M. Louis as regards the adult. In comparing the varieties of the one with those of the other, we are led to the conclusion that, in a considerable number of cases among the youngest children, these two diseases, about which there has been so much discussion, and which they have tried to separate, approach each other, and become confounded. These considerations are not idle, but should exercise an influence on our therapeutics. As soon as we are convinced that, in children from two to five years old, typhoid and enteritis resemble each other for the most part in their symptoms, we should avoid the employment of all means which, directed against the *dothienenterite*, may, by error, add a new stimulus to a disease simply inflammatory, and determine the eventual occurrence of grave accidents."

The distinction between typhoid and meningitis is also sometimes very difficult; and errors have been frequently committed by most distinguished pathologists and practitioners.

The authors arrange the various cases of the disease under three forms: slight typhoid; grave typhoid; and very grave typhoid. Of the 111 patients, there were 47 of the first, 41 of the second, and 23 of the last form; these three forms they also respectively term—(1,) the mucous; (2,) the bilious and inflammatory; and, (3,) the adynamic and ataxo-adynamic. The *prognosis* of the first form is highly favourable, for only 1 out of the 47 died. The danger of the second form arises from the supervention of inflammatory complications, such as enteritis, pneumonia, &c. There were 15 deaths from among 41 patients. In the severest form, too, death is often hastened by a complication, although it may also result from the severity of the uncomplicated disease, which then kills through the excessive perturbation it has caused the nervous system, the intestinal lesions having frequently disappeared long prior to death. Of the 23 patients, 13 died. Thus, of the 111 cases taken together, 29 died. Pneumonia proved a very fatal complication, for of 22 children, in whom it supervened, but 4 were cured. In 9 cases anasarca was observed.

"We find that the *complications* of typhoid fever may become developed at very different periods of this pyrexia, but that in general they supervene at a but little advanced period. There exists in this respect great differences between the phlegmasiæ, hæmorrhages, dropsies, gangrenes, and the eruptive fevers. Thus, while the former of these affections may be developed during the period of increase, or of the state of *dothienenterite*, the eruptive fevers alone only appear during the convalescence, at an epoch when the febrile action has considerably diminished or entirely disappeared. It seems, then, that there exists, between the typhoid affection and the eruptive fevers, a repulsion the more remarkable, inasmuch as these diseases resemble each other in so many of their characters. However, experience proves this repulsion is only temporary, as the eruptive fevers may appear the moment the typhoid disease has yielded the place to them."

Typhoid fever is especially observed between the ages of 9 and 14, less frequently between 5 and 9, and is rare in the earliest years of life. M. Taupin states that, in 121 cases, he has observed the disease ten times in children of four years of age, but the cases given by all other authors range from 8 to 14. Of the 111 cases recorded, 80 were boys, and 31 girls; and of the 121 of M. Taupin, 86 were boys and 36 girls. Occasionally the disease occurs epidemically in the hospital; and M. Rilliet observed a mild epidemic in a village near Geneva, which exclusively at-

tacked children, while, in a neighbouring village, numbers of adults fell victims to the same disease. The authors speak very doubtingly as to the *contagiousness* of the disease.

*Treatment.*—"Here, more than in other affections, we shall take care not to propose any special medicament—one that can be invariably applied always and everywhere, to slight and severe cases. As long as we do not know the intimate nature of typhoid, and that experience has discovered no antidote for it, we do not think it possible to lay down any treatment to the exclusion of all others. For this disease, as for the eruptive fevers, we are obliged to appreciate more or less particular details, which necessitate from day to day some modifidation in the plan."

It is to be borne in mind, that slight cases are almost always terminated by a restoration of health, and that it is to the complications we are to look as the source of danger in the severer forms; so that medicines having too debilitating an effect must be avoided.

The administration of *Purgatives* in typhoid fever has been much recommended of late years; but MM. R. and B. report unfavourably of their continuous use, since they, (1,) do not influence the symptoms or course of the disease; (2,) provoke inflammatory action in the intestine; (3,) they do not prevent the development of complications, and indeed may favour it. They, however, do not object to an emetico-purgative at the commencement of the disease, and occasional aperients during its course. So, too, they object to *bleeding*, except in the case of robust children, in the early stage of the ataxic form. But, as a general means, it is improper, (1,) as not influencing the symptoms; (2,) aggravating them or generating others, and hastening the fatal termination; (3,) favouring the occurrence of complications by the debility which is produced. It is more injurious in proportion as the disease has continued for a long space of time. The *Sulphate of Quinine*, which does not aggravate the local malady, is spoken of favourably in the adynamic forms. In most cases, hot vinegar or mustard *Cataplasms* were employed, and, in grave cases, *Blisters* were applied to the feet, although, according to our authors, with little effect on the cerebral symptoms. The *Expectant* method, giving merely emollient and nitrous drinks, and applying cataplasms to the abdomen, and sinapisms to the feet, has proved of good service in several cases. The *Complications* require careful treatment, which need not be detailed.

### *Variola.*

The chapter of MM. Rilliet and Barthez' work on Variola is a long and very able one. We will cite a few of the most interesting particulars, first premising that the variolous eruptions are divided by the authors into five groups—normal or regular variola; anormal variola; normal and anormal varioloid. and varicella—this last being added in conformity with the observations of others rather than with their own. The anatomy of the variolous pustule is especially well described, but is given at too great length for extract.

"*State of Organs after Death.*—The lesions which have been found at the autopsy of subjects who have succumbed to variola are sometimes insufficient to

explain death. In fact, we find some few kernels of pneumonia, a slight enteritis, a more or less extensive laryngitis, or even, lastly, an absence of all lesion of organs. But, after a more attentive examination, we find that there exists a more general fact than that just enounced, which is that, in most of the organs, and especially in the cavities of the heart and large vessels, a liquid, serous blood, sometimes of the colour of wine-lees, in more or less abundant quantity, is found. If there are clots, these are often small, black, soft, diffluent; and it is rare to find them colourless and fibrinous. They are especially seen when an acute, intense inflammation has invaded an important organ. In this case, sometimes fibrinous and solid coagula are found in the midst of an abundant serosity.

"If there are some exceptions to these remarks, they are rare, and are almost always explained by the accessory circumstances. Thus, a patient in whom variola is complicated with gangrene, has presented at the autopsy, a fluid and vinous blood, in spite of the co-existence of a severe and acute inflammation. The same is observed in children who have had several simultaneous or successive eruptions, in which case the presence of a pneumonia or pleurisy has not determined the formation of fibrinous coagula.

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"To the preceding remarks we may add, that most of the organs present a more or less intense sanguineous *congestion;* the muscles are red and firm; the membranes of the brain much injected; the sinuses gorged with blood; the cerebral substance more or less injected. Abundance of blood flows from the pulmonary vessels when divided; the liver, spleen, and kidneys present the same aspect, the congestion being general. There are, however, children who offer an exception to this rule. We have seen several of these in whom the eruption, during life was pale, wan, and blanched like themselves, exhibit after death but a very moderate injection, or even a considerable paleness, of the various organs.

"The results of our remarks are then—1. The possible absence of all important organic lesion. 2. The sanguineous congestion of every organ. 3. The deterioration of the blood. This last lesion doubtless suffices to explain death; but in this view we may add to it, in a certain number of cases, the abundance of the eruption. So extensive a surface as the skin, and the mucous membrane of the pharyngo-laryngeal passages, cannot, be inflamed over a large extent without danger to the patient."

The appearances which each organ manifests are then detailed, but we only extract those of—

"*The Intestines*, which present an aspect quite remarkable. Frequently there is considerable development of the follicles, either as regards number or size, at the commencement or end of the small intestine, and more rarely in the large. This follicular eruption consists in small hemispherical projections, either pointed or slightly flattened, and often presenting a small central black point, which is sometimes depressed. This may give rise to the belief of a vesicular or pustular development in the intestine, which seems to receive confirmation in the fact, that on pricking those projections, after carefully drying them, a little drop of serous fluid issues out.

"But this opinion is quite destroyed by the following considerations: 1. These same projections, containing serosity, exist in many other diseases, and are not special to variola. 2. A variolous vesicle cannot be formed where there is no epithelium to raise. 3. We have never seen the little false membranes, or other lesion, resembling those which are found on the other mucous membranes, as in the mouth, the pharynx, or larynx. The anal orifice is the only point of the intestinal mucous membrane upon which variolous pustules are found. 4. Lastly, another proof is found in the state of the patches of Peyer's glands, which are

as often developed as the isolated follicles. Numerous, large, projecting, softened, and often reddened, they exactly simulate certain typhoid patches at their commencement, and would be confounded with them if they presented any ulcerations. But we have never met with, and it is very rare to find, any enlargement, redness, or softening of the mesenteric glands. Nevertheless, this development of the patches and of the follicles is so frequent and so remarkable, that it ought to be taken into consideration: for it is one of the proofs of the tie which unites variola with typhoid.

"Besides this disposition, the intestinal mucous membrane frequently affords traces of an anterior congestion. Thus, it is covered with a layer of thick and adhesive mucus, or presents a general iron-gray colour, with punctations as if the blood in its passage had deposited its dark matter there."

*The Complications of Variola.*—These often add much to the gravity of the disease. Those discussed by the authors at length, are—1. *Ptyalism*, which is rare in children. 2. *Articular Inflammations* and *Abscesses*, which have been observed only four times in 153 cases. 3. *Otitis*, another rare complication. 4. *Corneitis*, terminating in ulceration, of which four cases presented themselves, occurring at an advanced period of desquamation. 5. *Bronchitis* is a rare and unimportant complication. 6. *Pneumonia* is far seldomer met with in variola than in rubeola, and puts on a different form. The *lobar* is here much more common than lobular pneumonia. But *serous congestion* is the most marked characteristic of variolous pneumonia. "It is astonishing to see the quantity of sanguinolent serosity which the slightest pressure forces from the inflamed parts. This serous congestion often extends over the entire lung, even when there is little or no pneumonia—so as to form a true œdema of the lungs." It is a very serious complication when it occurs in the anormal form of variola, but is easily curable when occurring during the convalescence of the normal form. 7. *Intestinal lesions.* The dysenteric and chronic forms of these are more frequent in variola than in the other eruptive fevers, and the severe purging attendant upon them is a very grave symptom in children. 8. *Hæmorrhages* form perhaps the most dangerous of all the complications, and are by no means unfrequent; for they were found to exist in 12 out of 39 anomalous variolæ. Epistaxis, which is usually of the active form, occurring at early stages of the disease, must not be confounded with these dangerous passive fluxes. The eruption in these cases is always very anormal. Any organ may be the seat of the hæmorrhage, but it is rarely abundant without the skin participating. Next to the skin, the various mucous membranes most frequently furnish the blood, then the lungs, and next the urinary apparatus and muscular system. From the third to the fifth day is the most common epoch of its appearance. When the skin is affected, the blood may occupy the pustules themselves, their circumference, or the intervals between them. The pustule must be opened to prove the existence of the small coagulum, and we must not confound this *purpura* with a mere violaceous injection of the skin. The prognosis in these cases is very unfavourable; and even a slight degree of this ecchymosis is a just cause of alarm, as exhibiting the serious change which has occurred in the blood. 9. *Gangrene* is a much less frequent complication in variola than in the other eruptive fevers. 10. *Anasarca.* Although œdema of the lung is pretty frequent in variola, it is not the

case with the other forms of dropsy. Only three cases of anasarca are mentioned, two occurring at the end of the period of desquamation. 11. *Other eruptive Fevers.* The authors have never seen a normal variola existing at the same time with any of these; but they have seen cases of scarlatina or rubeola with anomalous variola and varioloid. One case is mentioned, in which rubeola and variola alternately suspended the progress of each other.

"Measles and scarlatina seem, at first sight, to determine a derangement in the regular course of the febrile movement of variola. Thus, if they are developed while this disease is in its stage of suppuration, the fever does not cease on the appearance of the variolous pustules, because the patient is under the influence of the fever which precedes the eruption of scarlatina or measles. If, on the contrary, the new eruption is only developed during the period of desquamation, the febrile action of the variola follows its normal course in the early stages; and a few days before the eruptions of measles or scarlatina, there is an augmentation, or a new development of fever, according to the state of the pulse during the variola. The disturbance of the febrile action is therefore rather apparent than real; for the fever which belongs to each eruption is developed at its proper epoch, that of measles, *e. g.*, arising before or after that of variola, or coinciding with it, but not arresting its progress. The other symptoms offer a mixture of those which belong to each disease. Thus, bronchitis and lobular pneumonia predominate if measles become united to variola, while it is angina in the case of scarlatina. Here, there has been a double cause for the development of angina, and it has been constantly present in all our cases; but it has almost always been evident that the scarlatinous pharyngitis predominated over the variolous."

The complications which have been named are not found combined in the same individual, as in measles, in which three or four affections may co-exist. The intensity of the disease of the skin, and less susceptibility of the mucous membranes, may explain this.

"It will be seen that these variolous complications arise at two very different epochs; first, at the onset of the disease, not during the precursory symptoms, but from the first to the fourth day of the eruption, when the variola is anormal and mostly dangerous. Nevertheless, the anomalies are not always attributable to these complications, but to a predisposition existing prior to their development, and sometimes due to the epidemic constitution. The second epoch at which complications appear is that of convalescence, when desiccation is almost complete and desquamation has commenced, or sometimes at the end of this last. These affections, of a far less grave character than the preceding, belong in general, to normal variola, and seem sometimes to act as a critical phenomenon —a complement of the eruption more favorable than hurtful. In other cases, however, this end is exceeded, the complication becoming really an unfavourable accident, having nothing critical about it, and is followed by death. In fact, among the normal variolæ, these complicated cases are those which prove fatal."

*Influence of Vaccination.*—The beneficial influence of vaccine in rendering any subsequent attack of small-pox milder, is well-known; but the authors maintain it in some degree exerts the same effect even upon those who have never been vaccinated. For, although, as M. Bousquet observes, the varioloid disease has always co-existed with variola, yet the comparison of the accounts of variola in former times with what we see,

assures us that the proportion of varioloid has very much increased. They think the generation of an hereditary influence by the operation of vaccination must be adduced to explain this; and the cases which came under their care in 1837—40, were children of parents who had been born 1801—10, when vaccination was in full vogue in France.

MM. R. and B. do not recommend that vaccination should be at once practised when a child has been exposed to the source of variolous infection. It should be removed to another locality, until the time for the development of the variola, say a fortnight, has passed, when vaccination may be practised. This recommendation is founded upon the fact of their having observed, in several cases, not only that the course of the disease was not arrested by, but that a fatal form of variola occurred after, vaccination. This may have been a mere coincidence, for the children were young and feeble, and placed in adverse hygienic circumstances. One of the Sisters of the hospital, however, has remarked, that children vaccinated after remaining in the wards for some days, were generally brought back in a few days with a very severe form of variola.

*Prognosis.*—In reference to this, the authors do not attach the same degree of importance to the fact of the eruption being confluent or not that most observers do; but believe it of more consequence to observe whether there be complications or not. Simple variola is indeed usually curable, while the anomolous form almost always proves fatal. Of 39 examples only three were saved—this being the form in which change in the blood especially occurs. The younger the child the more unfavorable the prognosis, the anomalous and complicated forms being then most frequent.

*Treatment.*—The authors strongly protest against the system of generating the disease which prevails in the Paris Children's Hospital. Children are allowed to be brought into the wards where small-pox prevails, whether they have been vaccinated or not, and many remain there a day or two (or far longer) before this operation is performed, when they are again sent out probably to spread infection among their neighbours! Separate wards, at least, if not a separate institution, would seem an obvious precaution; but there can be no doubt that multitudes of children die at the Children's and Foundling Hospitals, in consequence of defective arrangements of this kind.

In regard to the *Management of the Eruption*, MM. R. and B. consider the point whether it is desirable to use any means to induce its abortion or favour its development, and conclude—1. That, in the great majority of cases, and especially when the eruption is normal, no general perturbating measures should be employed. The importance of having only a slight degree of eruption, stated by Sydenham, is less as regards the child, who succumbs generally to anomalous and complicated variola. 2. Nevertheless, Sydenham's observation, that variola is dangerous in proportion to the prevalence of the eruption on the face, is not to be lost sight of, and we may sometimes endeavour to lessen its force there by lessening the inflammation, and also thus preventing the disfiguring cicatrices. 3. Al-

though nothing can be more judicious than Sydenham's prohibition of the heating and stimulating plan of treatment then in vogue, yet there are certain anomalous variolæ, in which the eruption is too slight and indolent; and then we must assist its development, as we may also when we wish to substitute an eruption on the extremities for one on the face.

As to the means of accomplishing the above ends, the authors do not approve of the administration of bleeding or emetico-cathartics in children, or of allowing them to rise from their beds while the fever is upon them, for the purpose of diminishing the amount of eruption, as recommended by Sydenham—this not being an object of the same consequence in the child as in the adult. In three instances, they tried the plan recommended by Eichorn, viz., vaccinating by 40 or 50 small incisions during the precursory stage, or at the earliest period of the appearance of the eruption. In two of these the eruption became irregular and the children died. In the third, both eruptions proceeded simultaneously, and far more rapidly than usual. The cauterization of the individual pustules by a pencil of the *nitrate of silver*, is an infallible means of causing their abortion when practised on the first or second day, although it frequently succeeds on the third, fourth, or even fifth day. "The inflammation as well as the pustule is cut short, at least this effect has never failed to follow our cauterizing the pustules at the edges of the eyelids. It seems incredible to behold how rapidiy the œdema of these parts then disappears." It is, however, difficult to apply the caustic individually in the confluent disease, and in any case produces great pain, so that the authors agree with M. Rayer that its employment must be confined to those parts where it is important to prevent cicatrices, and on which the eruption is discrete. There is another plan whose employment is easier and nowise painful, viz., the direct application of the *emplastrum vigo cum mercurio* to the pustules. It should be applied the first or second day, or not later than the third. To be of avail a well-applied mask must be kept in complete contact with the face until the eruption has terminated upon other parts of the body. To meet the difficulty of maintaining the due application of the plaster in children, the apothecary of the Hospital has invented the following pommade as a substitute: ℞. Mercur. oint. 24 parts, Yellow wax 10 parts, Black pitch 6 parts. M. The application sometimes induces an eruption of *hydrargyria;* but is effectual in arresting the eruption and preventing scars.

We may observe that M. Goblin has published a paper in the "*Revue Medicale*," June 1845, in which he states, that a recent epidemic at Stains has given him the opportunity of observing the great benefit derived from the application of mercurial ointment, as recommended by him in 1834. Treating the premonitory stage in a manner so as not to check the development of the eruption, when this has appeared, he applies mercurial ointment, using it stronger and more frequently in proportion as the eruption has a tendency to become confluent. This arrests the progress of the pustule, and removes surrounding inflammation—the ointment being continued for several days. No salivation or other general symptom occurs, but a rapid disappearance of the eruption on the face takes place, leaving

no disfiguring marks. Two practitioners who witnessed this treatment certify to its success.*

The Chapter on *Scarlatina* does not contain anything calling for particular notice; but we may extract some interesting observations from that devoted to

*Rubeola.*

*Complications of Measles.*—This is a very well-written section. Of all the complications that of *Broncho-pneumonia* is the most frequent. Thus in 167 cases of rubeola, MM. R. and B. observed 24 cases of bronchitis, several severe ones, 7 of pneumonia without bronchitis, and 58 of lobular broncho-pneumonia—several of the last, however, being slight. The bronchitis presents no special characters when occurring in measles, and dilatation of the bronchi has never been seen, unless the child had lived at least ten days after the occurrence of the inflammation. The pneumonia is almost always lobular, occupying both lungs to a greater or less extent —so that kernels of inflamed lung are found either isolated or united in every lobe—the posterior and inferior portions of the organ being those especially affected. Compared with pneumonia occurring under other circumstances, the formation of *abscesses* is very common in that of measles; nearly one-half the autopsies exhibiting these, and sometimes in large numbers. Broncho-pneumonia may arise at three periods of the disease,—1, during the precursory stage and the earliest days of the eruption; 2, during the decrease of the eruption; and 3, during convalescence. It occurs more frequently during the first of these than during the other two put together. When the pneumonia occurs thus early, it deranges the progress of the eruption, so that it is in the anomalous form of rubeola that it is generally found. The pneumonia which comes on during convalescence may be independent of the rubeola, and separated from it by an interval of good health, and is then often lobar: but in other cases it has a direct connection with the febrile disease, or follows other complications, and is then lobular. Sometimes the pneumonia becomes very chronic, giving rise to the supposition of the existence of tubercle, until the autopsy exhibits but abscess of the lungs. Broncho-pneumonia is one of the most frequent causes of a fatal issue of the disease; for, while in simple rubeola a return to health is the general rule, hardly one out of four or five survives this complication, which is, however, often combined with others of a fatal character. Its occurrence in secondary and anormal rubeola is much more dangerous than in the primary disease. Its production seems often due to a sudden chilling of the surface, accompanied perhaps with a retrocession of the eruption. Pneumonia is most common in the younger children, while bronchitis, which is seldom dangerous, is found in the older ones.

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* Dr. Corrigan, in a recently-published lecture, speaks most highly, as a means of preventing future disfigurement, of the application of a compound, formed of lead plaster, melted with sufficient almond oil to allow of its being, when warmed, spread over the face by a pencil. It is allowed to dry, and the mask is retained until the scabs, detached by the new skin, gradually break it up and bring it away.

Among the other complications a frequent one is *Pharyngo-laryngitis.* In the 167 cases there were observed 24 of pharyngitis, 19 of laryngitis, and 16 of pharyngo-laryngitis. The authors believe this great predominance of these pharyngeal affections to be due to the simultaneous prevalence of scarlatina epidemics, as they regard laryngitis as a more special complication of measles than pharyngitis. There are the same lesions observed as these diseases produce in other cases, those of laryngitis being more serious, although merely the spasmodic form of this is also sometimes observed. This complication generally shows itself about the third or fourth day of the eruption, and does not generally add much to the mortality of the disease.

Lesions of the *Gastro-intestinal* mucous membrane are next in frequency to the pulmonic inflammations. Purging and swelling of the abdomen, however, must only cause the presumption of the existence of inflammatory action; for the autopsy has sometimes found, in cases where they have been present, the canal healthy. Nevertheless, the condition of the measles bears some relation to the extent of the diarrhœa. The course of the eruption is however seldom modified, although the febrile action is sometimes increased. This inflammatory affection is generally found in the anomalous forms of rubeola, and is accompanied by some other complication. It may show itself at the very commencement of the eruption, or some time after it has ceased, being generally more severe in the latter case than in the former. It is rarely the sole cause of a bad prognostic, but adds infinitely to the danger of a broncho-pneumonia. Injudicious food, or too active employment of purgatives, especially in young children, who are most liable to it, may induce this complication.

Another not infrequent complication is *Gangrene*, the mouth being the part usually affected, and after it, the lungs. It occurs from the thirteenth to the thirtieth day, and is rather an effect of the other complications than a direct consequence of the eruptive fever. Of eleven cases only one recovered.

Measles may likewise become complicated with *other eruptions;* and thus the authors have seen scarlatina seven times, variolous eruption twelve times, and erysipelas three times in conjunction with it. Such complications render the rubeola anormal, and its diagnosis becomes very difficult, the symptoms of the co-existing diseases becoming mixed. "A very remarkable thing in these cases is, that the intensity of the complication is the inverse of that of the eruptions. Thus when the scarlatina predominates the bronchitis is most severe; but if the rubeola predominates the angina is most intense. This result, apparently so singular, is explained if we reflect that, in a great many cases, there exists a kind of balance between the phlegmasiæ of the skin and of the mucous membranes, so that if the one becomes diminished the other is increased; and thus the scarlatina, causing the disappearance of the rubeola, augments the gravity of the bronchitis."

The authors thus conclude their remarks on the complications:—

"Until now we have only endeavoured to appreciate the separate influence of each complication, and it remains to consider them when united. It is rare in fact for a case of rubeola to become complicated with but one affection; for in general several co-exist or succeed each other, so that death results only from an uninter-

rupted series of diseases. Broncho-pneumonia, pharyngo-laryngitis, and entero-colitis, are at once the most frequent complications of measles, and those which are most commonly found together. Broncho-pneumonia is as it were the centre around which the others are arranged. It is accompanied in fact almost as frequently by one as by the other, but the other two diseases are not often found together without a concomitant pneumonia.

"We have already stated the influence these complications have upon the progress of the rubeola, and that this becomes anomalous,—1. If a severe complication productive of febrile excitement is developed during the precursory stage or period of increase of rubeola. 2. If the rubeola appears during the course of another disease, or during the convalescence of a severe disease. * * * We have seen that complications occurring during the precursory stage prolong its duration and retard the appearance of the eruption; but when this shews itself, it will be irregular from its commencement, or will only become so one, two, or three days later, according to the epoch of the occurrence and increase of the pulmonary disease. Then, even, it will continue too pale, and will not take the coppery tint, or it will suddenly disappear between the second and third, or third and fourth day. The pulmonary inflammations, the most powerful of all in influencing the form of the eruption, are so, however, only when developed at its early stage, and before it has arrived at that stage in which it only disappears incompletely under pressure of the finger. It is seldom that the entero-colitis determines any variety in the course of the eruption. * * * * * * * * * * Measles is considerably modified when it is developed during the course of another eruption, and that whether it comes on at the commencement of such disease, or after it is well established. In these cases its progress is more rapid, the period of decline becoming abridged, or altogether imperceptible, whether from its non-existence or its concealment by the other eruption. Lastly, the rubeola becomes anomalous when it appears during a severe disease which has deteriorated the constitution, after which some time is required before the child can recover its habitual health, as in the convalescence of severe variola, scarlatina, or pneumonia. It is the same if the rubeola arises during the course of a slow disease which debilitates the child, as chronic enteritis, or tuberculization. In all these cases it participates in the blanching of the patient: pale, shrunken, and small in quantity, the eruption rapidly disappears. Sometimes it slightly re-appears in a few days, and constantly hastens the fatal termination."

*Influence of Measles upon Diseases in the course of which it appears.*—It generally hastens the progress of these or provokes a relapse, when the affection is among those which habitually complicate it. But if it is not so, the measles may arrest it, render it regular, or even cure it. Thus it almost inevitably aggravates a pneumonia or tubercular disease; but under its influence a chorea, or anasarca after scarlatina, has been cured. In reference to its influence on *Tubercles* we have some useful remarks.

"This question is important, because its answer is contrary to the assertions we have made respecting the relations of tuberculization with the other eruptive fevers. Thus, we have seen that typhoid fever, variola, and scarlatina repel tuberculization, and we have sought our proof in the following facts—1. These affections do not engender tubercles. 2. They rarely attack tuberculous individuals, especially those in whom the cachexia has manifested itself. 3. They seem to exercise a favorable influence upon the tubercle by causing it to pass into the cretaceous state. We believe rubeola obeys quite a contrary law, and have shewn that it is the origin of tuberculization in a considerable number of cases. We may add that it is not uncommon to see it developed in phthisical children.

We believe then that rubeola assists the development of new tubercles, accelerates the progress of those which are already deposited, and exerts no influence in causing them to pass into the cretaceous state."

M. Bouchut, speaking of younger infants, states the case as strongly.

"How many times have we seen, after this disease, pulmonary tubercles form in subjects who did not appear predisposed to them! How many times have we seen under this influence the tubercular affection, latent in the child, acquire a new force, and manifest itself with an unexpected rapidity! It is the fact that rubeola exercises a veritable power in the development of pulmonary tubercle, and much accelerates the progress of this affection in children who are its subjects."

*Prognosis.*—This is *favourable* when the disease is primary and the precursory symptoms do not continue longer than from two to four days. When the eruption commencing in the face gradually extends itself over the entire body; and the concomitant inflammation of the mucous membranes is not intense. When the febrile re-action is moderate. When the eruption increases during one or two days and then gradually declines, the fever, cough, &c., also diminishing and disappearing. When the child in losing its rubeolic aspect does not become excessively pale. When it asks for food, wishes to rise or play, or notices objects, &c. When the sleep is sound and natural. It is *unfavourable* when the precursory symptoms continue more than four days, and are accompanied with severe symptoms, as oppression, epistaxis, &c. When the eruption follows an anormal course, even when none of these anomalies have existed and the child has gone on well until the decline of the eruption, we must still fear complications and their consequences when the face continues red and flushed, or, on the other hand extremely pale; when the cough, dyspnœa, purging, &c., continue; if the nights are sleepless, and the child is dull, listless, and without appetite.

M. Bouchut quotes the following passage from that experienced observer M. Trousseau:—

"It is a very prevalent prejudice among physicians, and especially in families, that rubeola and scarlatina are least dangerous when the eruption is most confluent. It is highly important to proclaim this a great and fatal error, for the influence of such a form of eruption is as hurtful as it is in small-pox. In this respect all our little patients (he is speaking of those in the epidemic presently alluded to) followed the general rule. All those in whom the eruption was discrete got well without difficulty. Three of those in whom it was confluent suffered from severe pneumonia; and what I observed in this little epidemic, affecting only one of my wards, I also observed in my private practice. It is especially however in scarlatina that this is evident; for while those cases in which the eruption shows itself chiefly in the throat and but little in the skin, are of slight gravity, those in which it manifests a bright colour and great tumefaction of the integuments, are as destructive as the most confluent small-pox."

*Incubation of Rubeola.*—The period of this has been very differently stated, by different authors. Of 38 patients who remained in the wards, the duration of the residence of whom prior to the appearance of measles was noted, in four instances the eruption appeared in from 4 to 5 days, in eight from 9 to 13 days, in twenty from 15 to 25 days, and in six from 28 to 58 days.

In reference to this point, M. Bouchut presents us with the history of a slight epidemic which occurred in the Necker Hospital in 1843, well observing that, more instruction has frequently been derived from the observation of epidemics in limited localities, than of those which attack large towns, where the history and progress of the various subjects are difficult of attainment. A child in the seventh day of the measles was brought into a ward in which were nine little children, one only of whom had had the disease. Of the remaining eight there were seven became affected, five of these 12 days after, and the two others on the 25th and 26th day. During the two months the disease prevailed, 17 other infants came into the ward, of whom two only took it. after remaining, the one 21 and the other 29 days, amid the infection. Succeeding new patients did not take the disease, nor did it pass into other wards, although these were only separated from this one by a boarded partition.

"It is then with the incubation of measles as with that of other contagious diseases, it has not the same duration in every subject. It would be rash to prescribe its limits, varying as it does in individuals and in conditions it is impossible to determine. Here the word predisposition offers a convenient disguise for our ignorance. In fact, according to predisposition, some are rapidly struck by an epidemic, and others are so only at a more distant period, or are even entirely spared by it. In other cases it is upon the form of the disease the predisposition seems to exert its influence. To recapitulate, in this epidemic the period of inoculation has varied from 12 to 29 days, a circumstance only explicable by the particular disposition of the children exposed to the infection."

This author quotes an observation of M. Guersant, which is of importance; viz., that we must have regard not only to the natural but accidental predisposition. Thus the subjects of observation both in M. Bouchut's and in MM. Rilliet and Barthez' cases were already suffering from other diseases in their respective hospitals, which might exert a material influence in delaying the appearance of the measles.

## CLASS VII.—TUBERCULIZATIONS.

The all-important subject of Tubercle occupies no less than 600 pages of MM. Rilliet and Barthez' work, and is treated in a most masterly manner. The subject is here placed before us in first its general aspect, and then its particular phases, in a completeness hitherto unattempted; and we only regret that our limited space compels us to curtail our notice more than we think desirable.

We think it best to transcribe some of the "Preliminary Observations" in the words employed by the authors.

"Tuberculization is the deposition in organs of an accidental production, without analogy in the economy, to which the name of Tubercle has been given. It is common to meet with this foreign body simultaneously in several organs, and whichever be that in which it is deposited, its nature, its evolution, and the greatest part of the phenomena it gives rise to, are the same. The different species of tuberculization, then, should, just as dropsies or phlegmasiæ, be considered as identical affections, whose differences principally result from the seat and functions of the organs they have invaded. Tubercle exerts on every tissue

the same local action; thus very frequently occasioning the development of a secondary inflammation, of which the frequency and characters vary according to the nature of the organ affected. The tubercular phlegmasiæ form a group just as well marked as do the simple phlegmasiæ.

"The general pathological effects which tubercle causes, being only influenced in an indirect manner by the organs affected, present an almost perfect identity in all the species of tuberculization. The most common of these effects is a general wasting, a consumption, to which the name of phthisis has been given. Pathologists who were occupied specially with the diseases of adults had admitted several species of this; but the signification of the word, reduced from time to time, has at last been exclusively applied by M. Louis to pulmonary tuberculization. We believe that it is proper to reserve this word phthisis to express the consumption arising from tubercular disease; but we believe it is to restrict its use too much to apply it only to pulmonary tuberculization, while various or improper names are employed to indicate the consumption which follows the tubercular deposit in other organs. According to our view, the deposit of tubercles in an organ constitutes its *tuberculization;* the tubercular consumption which succeeds should be called *tubercular phthisis;* and the inflammation which precedes it, or is the consequence of it, *tubercular phlegmasia.* This important distinction exists already in part for some organs; thus we say tubercular pneumonia and pulmonary phthisis; but we shall make a much more extensive application of it, and speak of pleural tuberculization, pleural phthisis, and tubercular pleurisy, of peritoneal tuberculization, peritoneal phthisis, and tubercular peritonitis, &c., &c. The numerous relations which unite tubercular phlegmasiæ justify us in having passed them by in silence in our first volume. On the other hand, the easy generalization of tubercle, and the almost identity of all tuberculizations, lead to general considerations far more numerous than could have been presented in the former classes. Thus we shall give to our preliminary chapter a greater extension than we have hitherto done. By acting thus we shall have the advantage of not attaching to tuberculization of the lungs the general history of tubercle, a method too often followed, and especially faulty in regard to children. We shall, too, avoid repeating for each organ the same observations upon the pathology, &c., which are common to all; and we can offer the history of acute or chronic general tuberculization—a disease much more frequent in infancy than at any other epoch of life."

After employing various arguments to prove the *identity of scrofula and tuberculization*, the authors proceed to consider the subject of—

### 1. *Tuberculization in General.*

*The Pathological Anatomy* is elaborately given. The crude miliary tubercle or yellow infiltration is described as originating—1, in grey granulation (very frequent in the child;) 2, gelatiniform infiltration, of which however but one example has been observed; 3, yellow granulations; and, 4, in what the authors term tubercular dust—so called from the exceedingly minute grains of which the deposit is made up, far smaller than that described as granulations. It may be disseminated amid grey granulation or a healthy structure.

The *semi-transparent grey granulation or infiltration* is regarded by many authors as the product of chronic inflammation; but the statement of Andral, that this is not found in any other organ than the lungs, is quite erroneous, as it may be seen in the child in every other organ of the body, liable to tubercle. MM. R. and B. believe that the grey infiltration may result from a chronic pneumonia, but that it may also appear indepen-

dently of this. "In acknowledging the grey granulation may be an inflammatory product, we do not isolate it from the yellow tubercle, which has an intimate connexion with the grey structure. We may say that tubercular matter is yellow or grey, and that the latter may give rise to the former; and, in fact, it is only in subjects presenting the yellow tubercular matter that we observe the grey; the first may exist alone, but not the latter; and it is in the middle of this grey tissue that the yellow tubercle is habitually developed. The yellow tubercle is however at other times found without a trace of grey matter, and is then independent of inflammatory action."

We need not follow the description of the softening of tubercle, the production of cavities, and the transformation of their contents into cretaceous substance—this latter change being rarer even than in the adult. The natural tissue amidst which tubercle is deposited disappears, either from absorption in some cases, or from conversion in others. Even when it exerts no compressing or condensing effect, the tubercle will excite inflammation as any other foreign body, whence, indeed, in some measure, arises tubercular excavation. Such inflammation is not always eliminatory, but may be of a low chronic kind, favouring new eruptions of tubercles. At other times it is acute, inducing death much earlier than it would have resulted from the mere influence of the tubercles.

The tuberculous deposit varies somewhat in appearance according to the nature of the organ in which it occurs. Thus, *e. g.*, it has a more rounded form in the midst of parenchymatous structure, and is more flattened at the surface. Upon the serous membranes we find the small miliary form, and extensive patches or plates of tuberculous matter. The miliary tubercle and the yellow granulation are the forms observed in the mucous membranes, the grey texture being seldom there seen. The various forms of tubercle may be seen in the absorbent glands; but generally these consist of amorphous masses, which often attain an immense size.

The *distribution of tubercle in the different organs* is an interesting matter of observation, as showing the differences which exist in children compared with adults, especially in young children. The various descriptions of tubercular matter are usually found in the same child, and thus, as in the adult, the lung, *e. g.*, may contain cavities, miliary tubercles, grey or yellow infiltration, &c.; but, in the child, a greater number of organs is usually simultaneously affected; and those organs, in which tuberculous matter is rarely deposited at a more advanced age, are far more liable to it in childhood.

"We believe we may divide our patients into three categories. In the first, the partial or general tuberculization is very abundant, and has been the principal or only cause of death. These constitute a little more than half of the cases. In the second, we place the children who had but a small number of tubercles, which cannot have contributed to the fatal termination—these forming more than one-fourth. The others, not constituting a fourth, form an intermediate class, the tuberculization in these being of a medium intensity, and having contributed, though but in a slight degree, to the fatal termination. Nevertheless, in nearly half of these cases, the tuberculization, although slight in any particular organ, has invaded a considerable number, and enough to entitle it to the term general. In 312 autopsies, 162 were found to have a considerable partial or general tuberculization, 64 a tuberculization of medium intensity which

was general 26 times. In 86 instances there was a deposit of a small number of tubercles in one or in several organs. In examining these three classes in reference to the age of the children, we find the slight tuberculizations are chiefly found in those aged from 3 to 5½; the medium tuberculizations from 1 to 2, and then from 3 to 5: while the very abundant are found oftener from 6 to 15 than from 1 to 5 years of age.

"In the child, as at a more advanced age, the lung is the organ which of all others oftenest tuberculizes; the bronchial glands come next, then, but at a great distance, the mesenteric glands and the small intestine. After these organs, the pleura and spleen are oftenest invaded, and then the peritoneum, liver, large intestine, membranes of the brain, the kidneys, the brain, the stomach, and the pericardium. Nearly the same order prevails as to intensity as to frequency; that is, the organs which are oftenest tuberculized, are those also in which tubercle is deposited with most abundance. The principal difference is found in the mesenteric gland and small intestine. Abundant tuberculization is much more rare in the former, although its existence is somewhat more frequent than in the latter. * * * * The tendency there is in several of the organs to become tuberculized at the same time is great; and if it is true that there are a good many cases in which only two or three organs contain tubercles, it is also true, that, of the fourteen organs we have specially studied, we have frequently found from four to eight so affected, and have even seen as many as from ten to thirteen. There is scarcely but the lungs and bronchial glands which form an exception to the rule. It is rare for them both to be tuberculated at the same time that the digestive tube or mesenteric glands are so alone. It is not rare to see these four organs simultaneously tuberculated, to the exclusion of all others. M. Louis has stated that, in the adult, we never observe tubercles in any viscus, without finding them also in the lungs. This law is not so true in infancy, for of the 312 cases, the lungs were found to be, after a minute examination, exempt from tubercle in 47 instances; and M. Papavoine has shewn the lungs were exempt from accidental productions in 12 out of 50 tuberculous children. * * * * * We may terminate these observations by stating, that it is common enough to see phthisis exclusively thoracic, and not rare to see it exclusively abdominal. Lastly, it is sometimes only encephalic, and it is the exception to find an advanced tuberculization at the same time in the abdomen and head, to the exclusion of the chest."

The above and other deductions are illustrated by detailed tables.

*Symptoms.*—The *face* is usually remarkably pale, although sometimes partially flushed, or rendered violaceous, if the respiration is obstructed. *Fever* is almost always present; but the pulse may rise to 140 or 160, without much heat of skin. Intense or not, according as the case is acute or chronic, the fever once established persists, and becomes much aggravated upon the supervention of any inflammation. The *skin* is dry and harsh, and partially desquamates, the patient being nevertheless much tormented with severe *sweating*, either partial or general, which seems to bear no relation to the presence or absence of diarrhœa. Partial *anasarca*, in a greater or less degree, is very common, being chiefly induced by the pressure exerted upon the vessels by the tubercles. *Wasting* is one of the most constant symptoms, and is not unfrequently the only early one of the disease. "Whenever a child more than five years of age wastes away, without this having been caused by an acute disease, for a considerable time, we must always suspect tubercle." The derangement of the digestive organs will be best considered in abdominal phthisis, but it may be

mentioned that the *tongue* is usually normal but very pale, except when there is inflammatory complication, when it may become red, dry, &c. The examination of the *abdomen*, when the organs it contains are suffering from no lesion, produces but negative results—an important fact, since, where the abdomen is found to have been distended and painful for a certain period, we may certainly conclude that lesions do exist. The functions of the organs may however be considerably deranged, independently of any lesion detectable after death, as an intense and prolonged diarrhœa. The desire for food and drink is more influenced in acute than in chronic lesions, and in those of the lungs than of other organs. But some children, even where there are lesions of the intestinal tube, maintain a natural appetite to the last.

Tuberculization may be acute or chronic as regards its duration or the severity of the symptoms. The *acute* form is generally characterized after death by grey or yellow granulations, or small isolated miliary tubercles, existing in a greater or less number in all the organs. They are rarely softened or cretaceous. Although one organ may be more especially affected than another, the tuberculization is usually general. It may arise spontaneously, or under the influence of an acute disease, especially measles, and is frequently accompanied by acute pneumonia. Whether primary or secondary, it may manifest itself under two distinct forms, the simply febrile and the typhoid. Its duration is comprised within rather vague limits, viz., from 16 or 18 to 60 or 80 days. Meningeal tuberculization usually passes through its course with most, and pulmonary tuberculization with least, rapidity. The *chronic* form is characterized by the presence of all the species of tubercle in their different stages. Hence the local symptoms are much more distinct. Its duration is very unlimited, generally, however, occupying from three to seven months in passing through its course.

*Causes.*—An infinity of these have been assigned for the production of tuberculization, but the authors only notice such of them whose influence they have been in a condition to examine. To this end they have noted the autopsies of 525 children dying in the hospital, in 314 of whom tubercles were, and in 211 were not, detected. First, in regard to *hereditary transmission*, this has been admitted by all authors; but the authors believe that Lugol carries the doctrine much too far, confounding congenital predisposition with direct hereditariness. The figures collected to elucidate this point are few. Of the 525 children, the probability or certainty of their parents having been tuberculous, was ascertained only in 62 instances: that they certainly or probably were not so, appeared in 233 instances; while no information could be obtained in 230 cases. Of the 62 instances, 16 were children who died non-tuberculous. Of the remaining 46 children, who died tuberculous, the disease seems to have been transmitted rather more frequently by the father than by the mother.

Among the *anti-hygienic causes*, a frequent cause is found to be the vitiation of the air; but although many of the children who died tuberculous had been exposed to the privation of air and light incident upon miserable domiciles, so had many of those who died non-tuberculous. M. Baudelocque has exaggerated the influence of this cause; for "all

those who have lived in a vitiated air do not become scrofulous, and all the scrofulous have not lived in any such air." It is a powerful cause, but not an indispensable one, and requires the co-operation of other causes. The authors believe that *humidity of the air* facilitates the contracting tubercle; and attach more influence to *bad nourishment* than Baudelocque has done, although the tuberculous children subjected to it, examined by them, only slightly preponderated over the non-tuberculous. *Onanism* is a habit frequently found in the children brought to the hospital, especially the tuberculous. It is an error to suppose that any one of these or other anti-hygienic causes will alone induce scrofula or tubercle: but when one or more are united, their influence is undeniable.

3. *Influence of Prior Diseases.*—(1) *Phlegmasiæ.* It is still a subject of dispute with the most eminent pathologists, whether inflammation can give rise to tubercle. The authors reply unhesitatingly in the affirmative; but add that, although it may be the immediate cause of this, it will only produce the deposition in those already predisposed; for "a pneumonia no more creates tubercles by its sole influence, than a chill creates a pneumonia or articular rheumatism." The tubercle may be deposited in the locality of the inflammation or in a remote organ, the progress of the affection being chronic in the latter case. Pneumonia and entero-colitis are the phlegmasiæ which especially determine the deposit, chiefly, however, in persons debilitated from other causes. (2) *Pertussis* without doubt may, aided by other causes, give rise to tubercle, which is usually first deposited in the bronchial glands. (3) *Typhoid Fever* and tubercle seem for the most part to possess a mutual power of repulsion. (4) *Variola* seems to possess little power in inducing or preventing tubercle. In none of the authors' variolous patients did tubercle supervene, nor did any of the chronic cases of the 314 tuberculous patients succeed to small-pox. Children who have had the small-pox are, however, by no means exempted from tubercle. (5) *Vaccinia.* The authors state, as the result of their investigations, that *vaccinated children are more disposed to become tubercular than unvaccinated children.* "We do not, however, state that vaccine is a cause of tubercle; but only that vaccinated children die oftener tuberculous than non-tuberculous, and that the contrary is the case with unvaccinated children. We conclude, therefore, that it favours the predisposition." (6) *Scarlatina.* This, like small-pox, exerts little effect in favouring or preventing the development of tubercle, but like it, it impedes its march when already formed. (7) *Measles* is a direct cause of tuberculization; and even children who have long since become completely cured of this disease are more liable to tubercle than those who have never had it. (8) *Chronic Disease*, such as tedious intermittent fevers, disease of the heart, rickets, &c. may give rise to tubercle. The tubercles, however, in these cases, are never in great quantity; and the number of non-tuberculous children dying from the same influences, exceeds that of the tuberculous. Rickets, indeed, has not been found a cause of tubercle, although several ricketty children have presented the accidental product. The coincidence of the disease is by no means so rare as represented, for the authors have found it three times out of seven in ricketty children.

"But, as we have often said, it is common to see these various causes uniting

in their operation upon the same child. Thus, if a pneumonia or rubeola produces tuberculization it is in a child whose parents have died tuberculous, or who has been long exposed to anti-hygienic causes. It is by losing sight of this fact that so many pathologists have believed in the exclusive influence of certain morbid agents. The anti-hygienic causes are certainly those which are, when existing alone, the most powerful: but then several of them act simultaneously. On the contrary, hereditariness and the various acute and chronic affections more rarely suffice for the production of the disease."

4. *Age & Sex.*—M. Papavoine, from numerous data, has concluded that tubercles are rare from birth to three years of age; increase in frequency from 4 to 7, and about the epoch of puberty they are about as frequent as from 3 to 4. He has erred, however, in reckoning the age of the children from the period of their death rather than from the onset of the disease. According to MM. R. and B. tubercle is especially frequent from 6 to 10½; then from 11 to 15; then from 3 to 5; and lastly, from 1 to 2½. This calculation is made comparing tuberculous with non-tuberculous children; but if we confine ourselves to the former, they are as numerous from 3 to 5½ as from 6 to 6½; and nearly as much so from 1 to 2½ as from 11 to 15. As to *sex:* of the total, 314 tuberculous children 195 were boys, 119 girls. From 1 to 2½ the boys are far more liable to the disease, while the difference is with the girls to some extent from 3 to 5. From 6 to 10½ the sexes are equal; but from 11 to 15 the girls are more liable.

5. *Conclusion.*—"We may group as exclusively predisposing causes, a weak constitution, the age from 6 to 15; the feminine sex and vaccination. Those which act either as predisposing or as occasional causes are hereditariness, vitiation of the air, residence in a damp locality, bad nourishment, prolonged residence in a hospital, onanism, some of the phlegmasiæ, pertussis and measles. In enumerating so few causes compared to the great number we alluded to, we have confined ourselves to those whose influence we had it in our power of demonstrating in children from 1 to 15 years of age. We may remark, in fine, that most of these causes are debilitating; and that the others, at first exciting, are followed by the formation of tubercles, in consequence of the secondary debility they induce."

*Treatment.*—As tuberculization when confirmed is difficult, if not impossible, of cure in the great majority of cases, every effort should be made to prevent its development where its occurrence may be suspected; and, in this point of view, a knowledge of the causes is of great importance. For the *Prophylaxis*, then, we have to place the patient under the best hygienic circumstances we can command for him, and which are detailed at some length by the authors. The treatment of the acute diseases which may give rise to tubercle, should be (1) active but not too long continued, so as to avoid a tedious and troublesome convalescence. (2) It should not be too debilitating. (3) Tonic treatment should be promptly put into force. Masturbation is often prevented only with the greatest difficulty. It occurs even in very young children, and is favoured by warm, soft beds. It is sometimes induced by herpetic and other affections of the prepuce and labium, or by the irritation propagated by worms at the extremity of the rectum. Donné has shown that the urine of these children, examined microscopically, shortly after indulgence in the practice, contains mucous

matter mixed with crystals of oxalate of lime. Of the *Curative* treatment there is not much to be said. The authors enter into an examination of the various medicinal substances, as iodine, &c., but without adding any original observations upon their effects.

2. *Tuberculization of the Bronchial Glands (Bronchial Phthisis.)*

This disease, special to childhood, is of frequent occurrence, and is important, both on account of the severe consequences it gives rise to, and the obscurity it sometimes imparts to the diagnosis of pulmonary tubercle, with which it is very frequently associated. All the varieties of tuberculous matter may exist in these glands, but that of infiltration is by far the most common. The number of glands affected varies much in different subjects, from five or six surrounding the bronchi, to a vast quantity—the more deep-seated never acquiring so large a size as the more superficial ones. The enlarged glands, by compressing the vessels, may give rise to hæmorrhages or œdemas, or, more frequently, may narrow the calibre of the trachea or bronchi. Perforation of the bronchi when, and sometimes before, the tubercle softens may occur; and doubtless the cysts formed by these intercommunications have frequently been mistaken for true vomicæ. In 249 autopsies, perforation has been observed in 27 instances. Perforation of the blood-vessels or œsophagus is vere rare.

No author has noticed the interesting fact, that tubercles occupying the lungs and those occupying these glands have a tendency in their progress to approach each other. There is a great disposition to the deposition of tuberculous matter upon the surface of the lung, which, however, after a while, instead of augmenting in quantity there, projects towards the parenchyma of the organ, at the same time that the glandular tubercle is pursuing a similar direction—so that they soon effect a junction. This occurs when the tubercles are yet crude; and, in the same way, when they become softened, the respective cavities tend to unite.

*Symptoms.*— The symptoms distinctive of bronchial phthisis are ascertained with some difficulty, since it is very rare for this form of tuberculization to exist alone. The compression produced on the vena cava by the glands, when very large, may give rise to œdema of the face, dilatation of the veins of the neck, or a violet-coloured complexion. When the pulmonary vessels are so compressed we may have hæmoptysis, which is however very rare in children. Pressure of the pneumogastric nerve also may give rise to a *spasmodic cough* and asthmatic paroxysms: and the voice may undergo much change, being at first hoarse, and then muffled or extinct. By auscultation, a very large, loud, sonorous rhonchus is heard, of remarkable persistence; and if humid rales exist, as in a bronchitis, these may become augmented so as to become more or less a gargouillement. There is also great weakness of the respiratory murmur, especially at the upper part of the chest. We may, indeed, hear all the sounds audible in phthisis, from prolonged expectoration to cavernous breathing, even when there is no communication with the bronchi. It is chiefly by the different epochs at which they appear, and their irregular character, that these sounds are distinguished from those denoting phthisis. When the lung is itself tuberculous, the affection of the bronchial glands much modifies the auscul-

tatory signs produced by it—exaggerating the anormal sounds to a great extent. So, too, the lesions of one lung may be the cause of the transmission of sounds to the other, giving rise to the fear that they are both affected. Dulness of percussion may likewise also lead to error, unless compared carefully with the auscultatory signs. The authors observe that, before they were aware of the above facts, they committed numerous and striking errors of diagnosis in these cases. "Then we found that the ideas, or rather the words, adopted since the time of Laennec, were not entirely applicable to children. Thus the *cavernous respiration* exists in the child in other lesions as well as when cavities are present, while under certain conditions and influences it is absent when they are present." The authors believe that the greater propinquity of the ear to the parts examined in the child explains this augmentation of sounds.

"The various symptoms which we have enumerated, and which are the result of the action of the enlarged and hardened glands upon the vessels, nerves, bronchi, and lungs, do neither exist constantly nor all united. Their existence depends upon the position of the glands and upon their development. But even when they exist they are subject to a remarkable law of intermission, from which none escape. Thus, œdema of the face appears and disappears easily. The changes of the sound of the voice and cough, the paroxysms of the latter, and the fits of asthma, exist one day and disappear the next, to re-appear at some intermediate epoch. The stethoscopic signs are not constantly the same, and do not observe a regularly increasing progress. Thus one day we perceive evident bronchial respiration, the next day only prolonged expiration, and the day after, cavernous respiration; so that dull respiration, prolonged expiration, bronchial and cavernous respiration, pectoriloquy, gargouillement, and even sonorous *râles*, may alternate or succeed each other without any regularity at uncertain periods."

In the great majority of cases bronchial phthisis pursues a very chronic course. The *diagnosis* must be derived from an attentive consideration of the above symptoms, and is often difficult. Besides the intermittence of the physical signs above-mentioned, the locality in which they are heard must be taken into account.

"The signs of bronchial phthisis are almost exclusively observed at the upper part of the lung, and principally on a level with the root of the bronchi, in the interscapular space. They exist also sometimes in front, but far more rarely. In the adult such a distinction as this would prove of little use, as tubercles almost exclusively occupy the apex. It is not so in the child, for they are often disseminated, and when they are seated at the apex, it is especially under the clavicle they are detected by auscultation. When then in a child suffering from a chronic pulmonary affection, we find signs of tubercle in the inter-scapular spaces, we should be led to believe, if these are variable in their progress and intensity, that they depend upon tuberculization of the bronchial glands."

In reference to the *Causes*, there is little special to be added to what has been said in respect to general tuberculization. Measles and pertussis especially induce glandular or pulmono-glandular phthisis. In all probability, also, chronic inflammation of the glands may give rise to the deposition of tubercle. Probably, too, inflammation of the lungs or bronchi may induce inflammation and tuberculization of these glands; but upon this head nothing very positive is known. All the periods of infancy are nearly alike liable to this form of tuberculization, the youngest being perhaps a little more so than others. Very advanced tuberculization is, however,

chiefly observed between the ages of 6 and 15. Girls are less subject than boys before 11, but from 11 to 15 the disease is as common in one sex as the other—the very advanced form being however at this age more common in girls.

### 3. *Tuberculization of the Lungs and Secondary Lesions (Pulmonary Phthisis.)*

The pathological anatomy is detailed at considerable length, but we must content ourselves with a summary of results. There were 265 autopsies. In 94 of these, gray granulations, and in 42 gray infiltration were found—the latter becoming much more proportionally frequent as the child was advanced in years. Chronic pneumonia, which is only found in tuberculous children, and which the authors consider as the transition between acute pneumonia and tubercle, existed in 19 instances. The tubercular dust occurred 15 times; but only twice as the sole tubercular deposit. In 68 instances, yellow granulations were met with; but the miliary tubercle is by far the most frequent form, 164 presenting it—more than a third of whom had but this species of tubercle. In 68 instances, the yellow infiltration existed. In 39 cases, softened tubercle was found, occurring especially between the ages of 11 and 15. In 77 cases, cavities existed. In 21 instances, cretaceous conversion of tubercle had taken place; and in 8 cases, cicatrices were observed. We may extract the following general observations:—

"The lungs are very often tuberculous in the child, but less often so than in the adult. Thus, of the 312 children who form the subjects of our observations, 265 had tubercles, and 47 were entirely without them. It is especially from the age of 3 to 5½ that the lungs of children are found healthy. We find, in fact, they are so 1 in 4 or 5 times; while from 1 to 2½ they are healthy but once in 8; from 6 to 10½ once in 10; and from 11 to 15 once in 7 or 8. Tubercles are a little more frequent in the right than in the left lung. This slight difference continues to the 6th year, while after that age there is a slight predominance in favour of the left lung. In much more than half the cases, both lungs were affected: but the younger the child, the less frequently did this occur. Lastly, let us recall an observation we made in our first volume, that of the whole number of children whose lungs contain tubercle, the tuberculization in more than half the cases is a secondary affection. This applies especially to the younger children, and is much more rare in those aged from 11 to 15. Among other children, again, the pulmonary tuberculization is very abundant, and is evidently the principal cause of death. This is so with more than a fourth of the cases; the proportion being considerable between the years 6 and 15, and especially so between 10 and 15. In a third category may be placed the children in whom the pulmonary disease, though intense, would not have sufficed to cause so speedy a death. This comprises less than a fourth of the cases, and no considerable difference as to age being remarkable."

Among the *Secondary Lesions* may be especially mentioned a considerable *œdema pulmonum*, *bronchitis*, and *acute pneumonia*. This last lesion is the most common by far. It may be caused by the direct irritation produced by the tubercle, and is then usually lobular, or it may arise in a distant part of a tubercular lung, when it is usually lobar. Lobular pneumonia is most common prior to 10 years of age, attacking the right lung especially and frequently both. Of 69 cases in 52 instances, both lungs were

affected, in 11 the right, and in 6 the left alone. "In comparing the two diseases we find there is a great number of children who have both pneumonia and tubercle in one or both lungs; a less number who have tubercles without pneumonia; and a yet less number, pneumonia without tubercle." Of the 312 children, in 11 only were the lungs found to be devoid of one or other disease.

The *Physical Symptoms* of the disease are detailed in a masterly manner, but at such length as to defy analysis in the space we have left. Of the *Rational Symptoms* we may mention that the *Respiration* is rarely natural in a phthisical child; the inspirations reaching sooner or later to from 30 to 80 per minute; being sometimes performed with ease, and at others with great labour and anxiety. It is rare to find acceleration at the commencement, unless there is a pneumonia also; and it is never so considerable in chronic as in acute tuberculization. *Cough* is nearly a constant symptom. It is often the first indication of tuberculization, which may have affected other organs, having invaded the lung. The cough may put on various characters, but usually continues during the whole period of the disease. When it is dry, small, frequent, or continuous, it indicates disseminated crude tubercle, and it becomes moist as the disease proceeds. When the cough is paroxysmal, it must be distinguished from pertussis, which it is by the absence of hooping, less congestion of the face, the less suddenness of the attack, and the absence of viscous discharge upon vomiting. Such paroxysms occur when the bronchial glands are tuberculized, or when mucosities become accumulated in dilated bronchi, or in cavities; the former being their exclusive cause in acute phthisis. *Expectoration.* Very young children do not furnish this, but those from seven to fifteen years do so not unfrequently, but never unless there is a cavity, pneumonia, or bronchitis. In five children only did *hæmoptysis* occur, and in none of these at an earlier age than seven. The symptoms in the child do not pursue the same regular course as in the adult. "The distinction between those of the commencement and those of the second period is difficult to establish, and frequently cannot be determined precisely. Nor can the symptoms always aid us in distinguishing the second from the third period. We know, in fact, that great enlargement of the glands suffices to lead to the belief of the existence of cavities." Although the disease generally runs its course in between three and seven months, it may occupy more than a couple of years in doing so.

In treating of the *causes* of pulmonary phthisis, MM. R. and B. offer a few additional observations upon the influence exerted by inflammation. They maintain that, although this is not a necessary preliminary, since tubercle is deposited independently of it, yet that in other cases the relation of cause and effect is undoubted—the predisposition being admitted to exist. M. Louis's observation, that pneumonia is developed at the base of the lung, and is simple, while tubercle is found at the apex, and is generally double, loses much of its force in the young; for in them, tubercle often attacks the base, and pneumonia is often double. But, granting the base to be more frequently inflamed, it is not necessary to admit that pneumonia and tubercle follow the same laws, to believe in the relation of cause and effect; and all we can say is, that when pneumonia occupies the

base it has less tendency to terminate in tubercle. "The existence of such predispositions explain the rarity of the fact. In order that a pneumonia may terminate in tubercular deposit, it is required (1) that it shall be seated at the apex; (2) that it occur in an individual predisposed to tubercle; (3) all the individuals predisposed to tubercle do not acquire a pneumonia of the apex. These conditions render the fact rare, but it is no less real. Pneumonia is here but an occasional cause of an imminent disease; as a proof of which, tubercle once deposited in an inflamed part, soon extends itself and becomes general."

Pulmonary phthisis occurs with nearly equal frequency at all ages of childhood. But advanced tubercle is more commonly found in the older, and crude tubercle in the younger, children. The disease is also more frequent in very young boys than girls, but the contrary about the epoch of puberty.

### 4. *Tuberculization of the Pleura (Pleural Phthisis.)*

There were 109 children who presented this form of the disease, and following is the author's summary of their detailed account of the *pathological anatomy:—*

"The tubercular deposits may take place upon the external or internal surface of this membrane and give rise to the following forms:—1. In the great pleural cavity the tubercles may form large patches which compress the lungs. 2. Externally to the membrane are produced these tubercular patches, or more or less considerable cavities. 3. The intra-pleural tubercles very rarely soften, and we have never seen them perforate the pleura. The extra-pleural may soften and ulcerate the serous membrane. 4. They may form free communications with the bronchi. 5. When these are in contact with a tubercular infiltration at the surface of the lung, there is first produced a pleuro-pulmonary mass of tubercle and then a cavity, which commences at the same time in the lung and the costal pleura. 6. If the pulmonary tubercles were already united to the bronchial glands, a mass of tuberculous matter traverses the lungs from these latter to the external surface of the costal pleura. 7. The different species of tubercle are, as regards frequency, as follows; miliary tubercle and tubercular patches; yellow granulation (which has been mistaken for false membranes,) and grey granulation. 8. Tubercle is commonly deposited in both pleuræ, and when but in one that is frequently the right. 9. Considerable tuberculization is usually unilateral. 10. Intra-pleural is more frequent than extra-pleural tubercle, and it is rare to find the two conjoined."

*Pneumo-thorax* is not very rare in the child, since seven cases were observed by the authors. Perforation of the vomicæ are, however, much rarer than in the adult. The pathology, symptoms, &c., are described at some length.

### 5. *Tuberculization of the Pericardium.*

Tuberculization of the pericardium has been only observed 10 times in the 312 autopsies, and in two of these was not much advanced.

### 6. *Tuberculization and Ulceration of the Larynx (Laryngeal Phthisis.)*

It is very rare to find tuberbles deposited under the mucous membrane of the larynx or trachea; and the ulcers, which are rather common, differ from the ordinary ulceration of the part. They are very small, varying in

size from a pin's head to a large lentil. Sometimes they are quite circular and as if clean cut out, but more often they are ellipsoid. Their edges are always thin and seldom detached, and it is rare to find them penetrating so deep as the muscular tissue. They much resemble superficial ulcers of the cornea in appearance. In almost all cases the bronchi suffer severe lesions also, but are not ulcerated. The entire number of ulcerations observed was 16; of which nine occurred in the larynx, four in the trachea, and three in both these parts. In one-half of these the disease remained latent without furnishing any symptoms. In the other cases, change of voice and pain in the region of the larynx were observed. The ulcers are found generally in children more than seven years of age.

7. *Tuberculization of the Peritoneum* (*Peritoneal Phthisis.*)

The various forms of tubercular deposition may take place in the peritoneum, but in different degrees of frequency. Thus, of 86 cases, the yellow granulation was found in 43, the grey in 24, miliary tubercle or tubercular patches in 37. The deposit was intra-serous in 40, extra-serous in 22, both of these in 22, and of doubtful seat in 10. Sometimes the deposition is enormously abundant, binding various organs to each other, but at others it only occupies very limited spots of the serous membrane. It was found abundant in 20 instances, moderately so in 14, and in small quantity in 42. The adhesions of the contiguous surfaces of the peritoneum, produced by the irritation of the sub-serous tubercles, present a great obstacle to perforation of the intestines. Tubercles which arise in the cavity of the serous membrane have no tendency to perforate, but those arising on its external surface possess such tendency.

*Symptoms.*—There are few of these which are sufficiently distinctive of the disease at its commencement, or even after it has progressed. The swelling of the belly which occurs is uniform and *ovoid*, accompanied with tension, and sometimes with indistinct fluctuation. It is generally sonorous, but in some cases only so in portions of its extent. After the disease has existed a certain time we observe the skin to become shining and desquamating, and sometimes the abdominal veins become dilated. In several children, from two to three years of age (when gaseous distension is very common,) all these symptoms have existed, and yet the peritoneum has been found after death unaffected. Vomiting, which is so common in acute peritonitis, is absent here; while, on the contrary, purging is constantly present. The disease is often cut short by the supervention of some other lesion, but all periods of duration between one and seven months have been observed. Even skilful practitioners have frequently mistaken an anormal development of the abdomen for this disease, especially in ricketty children. But it should be remembered that peritoneal phthisis is very rare in *very young children*, the usual subjects of rickets, in whom too the abdomen is globular, soft, and without tension.

Peritonitis may become developed in tubercular children both when the peritoneum is, and when it is not, the seat of tubercle.

8. *Tuberculization of the Mesenteric Glands* (*Mesenteric Phthisis.*)

According to most authors this is one of the most frequent affections of

infancy. It is far, however, from being so, and has been only thought so from the large belly of very young children having been mistaken for it, and peritoneal phthisis, intestinal ulceration, &c., having been confounded with it. If, indeed, we are to reckon all the cases as mesenteric disease in which slight affection of the glands exists, it is of very frequent occurrence, since this has been observed in one-half the tuberculous children (144.) If we confine ourselves to those in whom it is considerable, there is but one seventh of the whole number of those who have mesenteric tubercles, and but one-sixteenth of those in whom tuberculization exists in some part of the economy.

The mesenteric glands sometimes acquire an immense development when tuberculous, remaining crude or softened in part, but rarely forming cavities. The portion of gland surrounding the deposition occasionally remains healthy, and at others manifests inflammatory action. Considerable tuberculization of these glands ordinarily coincides with tuberculization of other organs, but the coincidence of mesenteric and peritoneal phthisis is rare. The disease is often difficult of determination, especially in its early stages, when the tubercle cannot be felt. The belly is seldom, at any period, swollen and tense, as in the peritoneal form. The tumours, which are always situated near the umbilicus, frequently cannot be detected, even when of considerable size. The voracity, said to be characteristic of the disease, is found in chronic peritonitis, and other tuberculizations. Purging was always present, but there also existed intestinal ulcerations. So unattended with peculiar symptoms does the disease continue for some time, that its duration cannot be accurately ascertained. It is a vulgar error that this disease is one especially affecting young children; for it is hardly ever seen in its severe form under three years of age. The investigations of the authors lead them to the conclusions—(1) That the disease is slight in proportion as the child is young. (2) It is observed at its maximum of development between the 5th and 10th year. (3) It rarely occurs in any form between 12 and 15. Boys are more liable to the disease than girls. Of the *prognosis* we have the following remarks:—

"If this disease continued concentrated in the abdomen, its prognosis would not be so serious as that of the tuberculization of other organs, for the local accidents produced by the tumours are rare, and offer much less gravity than those of peritoneal or bronchial phthisis. We do not observe in *tabes mesenterica* either serous inflammation, the consequence of perforation, or intestinal hæmorrhage. The other symptoms are but slight; the wasting being less rapid, and the fever less marked, than in pulmonary or peritoneal phthisis. The gravity of the disease then does not depend upon the local affection, but upon the general malady, and especially upon the pulmonary complications."

### 9. *Gastro-Intestinal Tuberculization.*

The gastro-intestinal is the only mucous membrane in which tubercle has been detected. The miliary tubercle, either crude or softened, and, as its consequence, intestinal ulceration, is the only form of deposition that has been seen. It is especially found at the lower end of the small intestine. In 141 autopsies in which tubercle or ulcerations existed, these were found 21 times in the stomach; 134 in the small intestines; 60 in the large, occurring especially in the cœcum. Ulceration of the intestine,

which is so common here, is, properly speaking, an epiphenomenon of general tuberculization, and accompanies also other forms of phthisis. It gives rise to a persistent diarrhœa, which is generally, but not always, proportioned to its extent, and is usually (as are the ulcers) most abundant and continuous in the older children. In 52 cases, in which the ulcers were few, the diarrhœa was yet as abundant, but then there were, in most of these, other secondary inflammatory affections present. In the other cases the diarrhœa was slight. All the children who did not suffer from diarrhœa were attacked with tubercular meningitis. Most of the children in whom ulcers existed, were likewise the subjects of tubercular peritonitis, or mesenteric phthisis. Prolonged diarrhœa is not of the same signification as indicating ulceration of the intestine in the child as in the adult, since it frequently arises from simple chronic enteritis.

The ramollissement of the gastro-intestinal membrane is a not unfrequent *secondary* lesion in phthisical children, especially such as have died of meningitis. It is revealed by no symptom, and frequently occurs shortly prior to death, or as a cadaveric change.

10. *Tuberculization of the Liver.*

This, which is rare in the adult, is not so in the child; for, of 312 tuberculous children, in 71 tubercles were found in the liver, the miliary and gray granulation being the forms usually observed. The deposit acquires a much deeper colour here than in any other organ. In 14 of the cases the tubercle was converted into small cavities or cysts, filled with a bilious-looking fluid.

*Fatty Degeneration of the Liver.*—This change in the liver of phthisical patients is less common in children than in adults, and is found as a sequence of other diseases also, especially the eruptive and typhoid fevers. In the 312 tuberculous children it has been observed 23 times, and in 211 non-tuberculous 14 times. It is very rare to find tubercle in a fatty liver. Very young children are more disposed to it than older ones, and especially when tuberculization is only slight.

11. *Tuberculization of the Kidneys.*

Instances of tuberculization of the kidney are much more frequently met with in the child than in the adult; "but it is rare to find it acquiring a high degree of intensity, or constituting important changes." All advanced cases recorded have occurred in children at least ten years of age, being then usually a part of an advanced general tuberculization. Of the 312 tuberculous patients, the kidneys were found affected 49 times, in 15 of which the deposit was pretty abundant, and in 34 only scanty; occurring in 37 instances in both kidneys. The disease is generally latent, and seems to exert but little influence upon the progress or termination of the general tuberculization.

12. *Tuberculization of the Spleen.*

This is one of the organs in which tubercle is deposited with most frequency and greatest abundance in childhood. Of the 312 cases, 107 presented tuberculous matter in the spleen, in 87 of which it was of the

miliary form. When the tubercles are very abundant they may distend and enlarge the organ, but sometimes there is also hypertrophy independently of the tubercular deposit, which may then be a mere coincidence. There are no special symptoms. Boys and the youngest children are more subject to the disease than girls and older children.

13. *Tuberculization of the Brain and its Membranes.*

Tubercles may be deposited in the membranes or substance of the brain. The former are more frequent of occurrence and in number, and where the two co-exist it is often difficult to say in which site the deposition first took place. Generally of small size, tubercle, when seated in the cerebral substance, sometimes acquires large dimensions, exceeding those of the egg of a fowl.

MM. R. and B. go into considerable details as to the characters, symptoms, &c., of each of these affections, but our exhausted space forbids our following them. This is of the less consequence, since most of the symptoms incident upon deposition of tubercle in the brain (when the disease is not latent, as it sometimes is) are similar to those induced by other chronic diseases of that organ: while *Tuberculous Meningitis* being, in the opinion of the French school, identical with *Acute Hydrocephalus*, we shall have another opportunity of adverting to the facts adduced, in our review of Dr. Smith's work upon that subject.

It may be useful, in conclusion, to extract a Synopsis of the relative frequency of the occurrence of tubercle in the various organs of the 312 tuberculous children examined:—

| | Total. | Considerable. | Medium. | Slight. |
|---|---|---|---|---|
| "Lungs .. .. .. .. | 265 | 71 | 52 | 142 |
| Bronchial Glands .. | 249 | 69 | 77 | 103 |
| Mesenteric Glands .. | 144 | 20 | 48 | 76 |
| Small Intestines .. .. | 134 | 50 | 14 | 70 |
| Pleura .. .. .. .. | 109 | 21 | 35 | 53 |
| Spleen .. .. .. .. | 107 | 25 | 25 | 57 |
| Peritoneum .. .. .. | 86 | 20 | 24 | 42 |
| Liver .. .. .. .. | 71 | 14 | 18 | 39 |
| Large Intestines .. .. | 60 | 10 | 18 | 32 |
| Membranes of Brain .. | 52 | 12 | 20 | 20 |
| Kidneys .. .. .. | 49 | 5 | 10 | 34 |
| Brain .. .. .. .. | 37 | 12 | 9 | 16 |
| Stomach .. .. .. | 21 | 2 | 4 | 15 |
| Pericardium .. .. | 10 | 2 | 1 | 7 |

"One organ alone was tuberculous but in 48 instances, viz., in the Lungs 23 times; the Bronchial glands 19 times; the Pleura and Brain each twice: Membranes of the Brain and Kidneys each once."

The last class, *Intestinal Worms*, does not call for any notice at our hands; and, in terminating our analysis of this treatise of MM. Rilliet and Barthez, we need only repeat the statement of the great satisfaction we have derived from its perusal, and cordially recommend it to our readers. We sincerely hope that the same co-operative industry, patient investigation of truth, and impartial statement of results, may continue to be employed in other extensive and important fields of research.

THE GENERAL NATURE AND TREATMENT OF TUMOURS. By *George Macilwain*, &c., &c. 8vo. pp. 219. London, Churchill, 1845.

MR. MACILWAIN commences his Preface by stating "in the following pages I have endeavoured to *sketch* the principles and application of what I call 'Organic Surgery,' to the treatment of tumours." This assertion, and the title of the work, led us to expect some novel views with regard to the anatomy and pathology, as well as the treatment, of the various tumours to which the human frame is so lamentably subject; and we hoped to have met with an improved classification, or at all events an amendment upon the attempts at arrangement already made. We have, however, been disappointed; for, although the book contains many valuable observations, mostly truisms, with some few exceptions, they are equally applicable to all chronic diseases, and the work would have consequently borne a corresponding title with nearly equal truth to the one adopted.

Our author makes frequent allusion to his other published labours, which implies the necessity of consulting them in order to properly understand the work under notice; whether such perusal would be profitably bestowed we have not yet had the opportunity of deciding, but certain it is, our author's allusions shew the good opinion he entertains of their merits.

"Organic Surgery" is hardly a happy term, as not conveying the intended meaning, as it may imply the surgery of the different organs, or of an organic tissue, and we are not quite sure we are correct in understanding it here to refer to the investigation of all the organs of the body in local disease, and the treatment of such as are detected in fault. The apparent objects of the work are, first, to impress the fact that all tumours are consequent upon an interruption of function of one or more of the great secreting and exhaling organs; and that many of them are deposits of chemical combinations which should have been separated from the body by the normal action of a healthy organ, but, being retained, the general system is relieved by the local deposit. And, in the second place, to direct attention to the necessity of carefully investigating the condition of every organ of the body, particularly of course those of vegetative life, to ascertain the structure in fault, to which, being the primary seat of disease, medical remedies are to be applied, and not to the tumour itself, the secondary or consequent affection. Thus carrying out the views, but hardly improving upon them, for which the world is so deeply indebted to the late Mr. Abernethy.

Mr. Macilwain's sweeping theory of the origin of all tumours may fairly be disputed; that many of the mild character arise, as he describes, has been admitted and taught for a long period; but there are many the connection of which with general disorder is very doubtful; and others which plainly have no reference to disease of the organs of nutrition; in the first class we allude to tumours evidently excited by mechanical injury, or occurring in a structure about to assume or part with a function, as in

the breast, uterus, or testicle, in many of which cases the inference is rather that the local disease is primary and the general affection, if any, secondary; in the second class we would refer to tumours formed by parasitic animals; although we willingly admit the present uncertainty of their origin in many instances, and incline to the belief that a general deficiency of organism is occasionally connected with, though most likely not giving rise to, their formation and growth, yet we have no doubt that the majority of such cases are entirely local, with the formation of which the general health has nothing to do, however it may be influenced by the progress of the tumour.

Among much heterogeneous matter, and we feel unwillingly obliged to add, unsuccessful attempts at "philosophical induction," Mr. Macilwain's work contains many useful "hints" for the improvement of practice in these and other chronic diseases, and the more perfectly to carry the practice into operation, he has recommended a "Table of Record" of the previous and existing condition of the patient, of the inherent and surrounding circumstances, &c.; similar in many particulars to those used by the clinical clerks of our own hospitals, as well as on the Continent.* We entirely coincide in the author's opinion of the usefulness, nay in many instances of the necessity, of such minute examination, and of recording the altered conditions from time to time; but it is equally certain that it can admit only of partial application; in the routine of practice, neither the physician nor the surgeon has time to devote to such record, even if the patient would submit to this careful examination, excepting in cases of urgent seriousness and great interest; at the same time, it would be very advantageous to the public health and to professional usefulness, if every student in medicine and young practitioner were to habituate himself to some such investigation and record of the condition of every organ of the body, his mind being thus schooled, would more easily and rapidly take in the leading features of the health or disease of individuals in his after more busy life, a tact which will assuredly be of infinite value both to himself and his patients.

Mr. Macilwain seems to possess great confidence in the cure of tumours not positively malignant, through the restoration of the general health, oe the health of any one or more disturbed organs, and not a little in the amelioration of incurable diseases; and anticipates the time when, by the further advance of the sciences of disease and of chemistry, even those now justly regarded as malignant, will yield to the appropriate treatment, We sincerely hope his anticipations will be realised, though at present the desideratum appears to be far distant.

We are presented with some good observations under the head "Of Health and Disease, and of Conditions of Transition from one to the other," and regret that they are so mingled with matter holding little or no connection with the subject. We have long been impressed with the fact of

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*The author notices that he was the first who delivered clinical lectures in the Metropolis, a circumstance especially creditable, and the more so, if it were that example which has led to their general introduction in the practice of medical tuition.

disease existing without giving rise to symptoms, or if they exist are only to be detected by more than ordinary careful investigation. Mr. Macilwain says, "I hear continually both patients and medical men say, 'the general health is good,' 'there seems nothing wrong in the general health,' 'all the functions seem properly performed,' &c., in cases where nothing is more easy than to demonstrate the contrary. Now, in morbid anatomy, an important truly, but still a comparatively very small, branch of enquiry, no man thinks himself competent even to study, much less to apply it, without informing himself thoroughly as to the marks which distinguish healthy structure; and if a system of surgery is to be recommended which is professedly based, no matter what the disease is, on correcting the functions of various organs which may be faulty, the whole matter turns on our distinguishing what is faulty and what is not so." "Now the determination of the signs of health are not so simple as many persons may imagine." In allusion to "compensating functions" we have this observation, "The very first fact we perceive, when disease, *commonly* so called, does occur, is, that it is not seated in the organ to whose functions the disturbing causes were originally applied, but to that which had been employed in the *compensating function*." Mr. Macilwain modifies, properly enough, this important assertion further on, which is of frequent application but by no means universal.

Probably the most valuable portion of this work is contained in the "Hints on the Management of different Organs;" Mr. Macilwain recommends an accurate register of diet to be kept in a "Diet-book" to afford both patient and practitioner an opportunity of ascertaining and correcting what may be wrong: perhaps the most annoying and troublesome part of the treatment of chronic diseases exists in the regulation of diet, and therefore any assistance, however slight, will be valuable. We are gratified in reading many useful "hints" in the general regulation of the nutrient organs, and regret that, among much practical matter, there appears to us to be mixed up much of error in the physiology in which our author has indulged; he has adopted the idea at the suggestion of "Mr. Maugham, a man of striking talent, and a bold and original thinker," that the lungs are merely "refrigerating organs," and supported it by arguments which may be easily refuted by the tyro in physiology; that the lungs are "refrigerating organs" we have no doubt, but that they serve also higher and more essential purposes in the animal economy may be readily proved. Mr. Macilwain, however, "hopes to find time to publish, in a complete form, the whole facts on which the allegations are founded;" until we have then an opportunity of correcting our opinions we must consider that our author would have better consulted his own reputation, and the usefulness of his book, if he had confined it to the really good practical matter it contains, rather than have attempted to shew himself a philosopher, in which he has signally failed. Wisely enough, little dependence is placed on local measures to tumours, yet they are not altogether so valueless as represented. Mr. Macilwain says, "there is no such thing, in my opinion, as a 'local application' in surgery, if by that term is meant a measure whose influence is necessarily confined to the part."

The author has refused to the profession in general the credit it deserves, not doing it justice corresponding to its acquirements, and some authors

and teachers he has certainly misrepresented, circumstances attributable to a feeling, which is clearly evidenced in his work, of the superiority of his own mind and information,—a feeling which leads him to assume the tone of philosophical dictation, for which his present acquirements do not fit him—to this same feeling may be attributed the colloquial and often careless style in the language used, which sometimes almost excites a smile. Notwithstanding, we recommend the careful perusal of the work to the whole profession, but especially to its younger members, as the wheat which it contains may readily be separated from the chaff.

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SCHOENLEIN'S KLINISCHE VORTRAGE IN DEM CHARITÉ-KRANKENHAUSE ZU BERLIN: Redigirt und herausgegeben von Dr. *Guterbock*. Zweite Auflage. 8vo. pp. 480. Berlin, 1842—4.

Schoenlein's Clinical Lectures in the Infirmary at Berlin: Edited and published by Dr. Guterbock. 2d Edition.

THE name of Schoenlein stands high in Germany, and indeed throughout Europe, as that of a most enlightened and accomplished physician. The character and genius of these Reports will fully sustain the reputation which he enjoys; for few, we think, can rise from their perusal without gaining some instruction. They have reminded us in several particulars of those that were published, some years ago, by Dr. Bright, and which at once established the fame of that gentleman as one of the shrewdest observers and ablest practitioners of the day. German works are usually so prolix and wearisome, and withal often so intricate and perplexed, from the spirit of abstruse disquisition which pervades them, that it is really quite a treat to meet with such a production as the present from our trans-Rhenal brethren. Hitherto, it is truly astonishing how little has been contributed (within the present century) to the advancement of *practical* medicine—we do not say, surgery—by a people whose men of literature and science are universally looked up to as patterns of Herculean industry and unwearied research. But it may be the very possession of these most meritorious attributes, that has in some degree disqualified them from being simple observers and practical therapeutists. They are so much taken up with searching into the *causes* of disease, that they often entirely neglect the immediate *effects* (which are the symptoms;) and, in their zeal to pry into the hidden and profound mysteries of vital action, they are not unfrequently apt to overlook what is lying before their very eyes upon the surface. It is the fashion of some writers to decry the unphilosophical (as they choose to call it) method of seeking to cure diseases by treating symptoms, without having constant regard to the proximate causes from which they may be supposed to spring. This might be all very well, if diseases were uniformly the same entities in all individuals, following precisely the same course and always amenable to the same remedies. But such is not, and cannot from the very constitution of our minds and bodies, be the case;

and, whatever theorists may choose to say to the contrary, that man will always be considered to be the most skilful physician who knows best how to afford relief to present distress, and, at the same time, "to obviate the tendency to death," in all grave maladies. Let it not be supposed that we under-rate the value of the aids to be derived from the pursuit of morbid anatomy, of the microscopic and chemical examination of healthy and diseased structures, and of whatsoever is calculated to make us better acquainted with the intimate organization of animal bodies; all that we mean to contend for is, that no undue or exaggerated importance should be attached to such researches, as if they were unerring guides to the practitioner in the treatment of disease. They may, indeed, *suggest* the use of remedies, but they must not be allowed to *dictate* them. They may often teach us how to *navigate* the vessel, but not how to *steer* it; especially when it is tossed about by baffling winds, or when it is approaching a dangerous and uncertain shore. The best pilot will be he who knows not only the bearings of the land, the depth of the soundings, the drift of the currents, and so forth, but also how to work the ship most efficiently, to guide the helm, to trim the sails, and, in short, to make use of all those dexterities of seamanship, which nothing but experience and patient assiduity can give. Now, it is in the dexterities of medical practice that the English physician is generally believed—and, we think, with perfect justice—to be superior to his continental brethren; he is not so learned a navigator, but he is a better steersman of the vessel of life through many of the difficulties of its stormy and perplexed voyage.* The author, whose opinions we are now about to bring under the notice of our readers, is a man of this practical stamp; and, as he has been long engaged in the active duties of the profession, it cannot but be useful to compare notes with him, keeping our minds free from all partiality or prejudice, not tied or *addicted* to the precepts of any one school or master; in short, willing to receive, and ready to communicate. We may, therefore, cordially reciprocate the Horatian sentiment:

> Vive, vale. Si quid novisti rectius istis,
> Candidus imperti; si non, his utere mecum.

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* It is always amusing, and may be instructive, to learn what strangers say of us as a people. The following is one of the latest descriptions of our character and manners by a foreign traveller! The English are "a people who can only contrive to get rid of their *ennui* by plunging into the vortex of political and mercantile activity. The perfection of the machines, which are here placed everywhere in bustling operation, and perform so many of the functions of human beings, made a disagreeable impression upon me. This artificial bustle of wheels, bars, cylinders, pistons, thousands of little blocks, pegs, teeth, &c., which move almost with passion, filled me with loathing. The determinate, the exact, the measured, and the precise, in the life of the English people, tormented me no less; the machines appear to me like men, and the men appear like machines. Wood, iron, and brass seem to have usurped in England the functions of living man, and to have absolutely become insane from a superabundance of the spiritual principle; whereas, the spiritless man, like an empty and inanimate spectre, performs his usual routine of occupations after the manner of a machine; and at the exact predetermined minute, he eats his beek-steak, makes a speech in Parliament, steps into a stage-coach or railway-train, goes to bed, or hangs himself." Poor John Bull!—foreigners don't like you, that's clear.

The entire volume is taken up with reports, more or less detailed, of medical cases; (42 in number;) the diseases, that are illustrated, being Typhus Fever, Pneumonia and Pleuritis, Rheumatism and Heart-affections, Peritonitis, Jaundice, Ileus, Hæmatemesis, Tumours in the Abdomen, Diabetes, Erysipelas, Apoplexy, &c. As the subject of Typhus Fever is treated at greater length than any other disease, we propose to give abstracts of most of the cases that are related, selecting such expository remarks and comments as appear to be most useful and instructive.

*Typhus Abdominalis—Injurious Effects of Emetics—Utility of Calomel—Deterioration of the Symptoms after the 14th day.—Coma and Death—Dissection—Remarks.*

A youth, 19 years of age, exhibited upon his admission into the hospital the usual symptoms of *Typhus mitior*. The abdominal symptoms were not very strongly marked; for there was scarcely any tenderness on pressure, even over the *caput cæci*. The urine was turbid, and had a mucous sediment. The patient had been seized with shiverings, eight or nine days before; so that he might be considered as in the second week of the fever.

It used to be the practice of many of the older physicians to administer an emetic at the commencement of Typhus fever, with the view of cutting it short. Dr. Schoenlein condemns this practice; according to his observation, the gastric and other symptoms have generally become aggravated after the action of vomiting, more especially when the tartrate of Antimony had been given. As the eruption of an Exanthematous fever is always found to be the greatest upon any part of the surface of the skin which may have been accidentally irritated, so we may reasonably infer that the eruption or exanthem upon the mucous surface of the alimentary canal must be aggravated by the irritation which an emetic necessarily produces. For the same reason, saline purgatives are generally injurious in the treatment of Typhus: Calomel is a much safer remedy. Autenrieth, in 1806 and 1807, first recommended its exhibition in this disease: he gave it in small doses, for the purpose of causing the peculiar green stools that usually follow its administration. Formerly, alvine evacuations of this character were supposed to contain a quantity of Bile; but recent microscopic researches seem to show that it is vitiated Blood, rather than bile, that is present in them, giving them their peculiar appearance. During the administration of Calomel, the motions often become more solid, and less frequent, than they were before; so that we may even have occasion to give enemata in order to procure sufficient evacuations—a sufficient proof of the unirritating properties of the medicine. Very different, we need scarcely say, is the action of saline purgatives.

In what period of Typhus is the use of calomel most beneficial? Dr. Schoenlein would limit its use to the first eight or nine days of the fever; and he remarks that, the earlier it is given, the more useful are its effects: the best period for its exhibition being the first three or four days. The accession of great tenderness of the abdomen, with a dry skin and a frequent pulse, and the aggravation of the nervous symptoms indicate the limit to its further exhibition. In a later peri[illegible] its administration is

positively injurious. Physicians differ a good deal as to the doses that ought to be given. Some order three or four grains every two or three hours, until the desired alvine evacuations are induced; while those of the Tubingen School prefer to exhibit a full scruple of the medicine at once, repeating the dose every second day afterwards, until the motions become less frequent. In the present case, the latter plan was followed. The bowels were not much moved in this patient by the large doses administered. As there is often an acid present in the stomach, it will be generally found useful to combine the Calomel with a few grains of Magnesia. Dr. Schoenlein considers that salivation, so far from being desirable in Typhus fever, is always to be regretted. If the Calomel is not brought in immediate contact with the mouth, when it is swallowed, there will be less tendency to this unpleasant effect taking place. A weak solution of Iodine is one of the most useful correctives of mercurial salivation.

The second dose of the Calomel (ʒj.) caused four evacuations, which were of a brownish and dark green colour, and of a pappy consistence. As the Skin is the organ by which the critical resolution of Fever usually takes place, small doses of *spiritus Mindereri* were ordered to be taken frequently, and a warm bath also was proscribed.

About the end of the second week, and therefore as one of the critical days drew near, there was observed to be a greater degree of stupor than had hitherto existed: the tongue was furred, but moist; the pulse was moderate; and the abdomen continued soft, although in the cæcal region there was always the characteristic gurgling murmur, and also a slight tenderness in the part upon pressure. The warm bath was repeated; the diaphoretic medicine, in rather larger doses and with the addition of a little *tinct.* Valerianæ, was continued; a mustard poultice to the calves of the legs was ordered; and also an aperient enema, as the bowels had not acted for 48 hours.

So far from any decided resolution taking place on the 14th day, the nervous symptoms had become rather worse; and there was therefore now no prospect of any decided amendment taking place for another week. The patient was in that state which P. Frank characterizes as "nervosa stupida:" he was more or less oppressed during the whole of the day, passing his water in bed if not roused; and he was somewhat delirious during the night. A cold lotion was applied to the head; some leeches were put upon the temples; an enema with the *acet. plumbi* was administered;* and the *infus. Valerianæ* with *Mindererus spirit* given in frequent doses. Matters did not mend; the stupor increased; and there were now frequent twitchings of the muscles, and grindings of the teeth. The abdomen was more tender upon pressure; the motions were more feculent, but not more frequent, than before. As the disease had now assumed an altogether torpid character, the *infusum Cinchonæ* was given, and blisters were applied upon the calves of the legs. In spite of these means, the

* This enema consists of gruel, to which 10—12 drops of the *liquor plumbi* are added; if there be any diarrhœa present, the addition of a small portion of Laudanum will be useful. The longer the patient can retain the injection, the better. It is a favourite prescription of Schoenlein's.

unfavourable symptoms increased, the patient became more and more comatose, and died on the 17th or 18th day of the disease.

*Dissection.*—A number of small scrofulous glands or tubercles were found in the *omentum*, and peritoneal covering of the small intestines. On the mucous surface of the lower end of the *ileum*, and of the commencement of the *colon*, there were several small ulcerated points, which seemed to have been in the act of healing at the period of death. The Peyerian glands were but little affected. The intestinal lesions in this case were therefore much less decided than is usual in Typhus fever. The lateral ventricles of the *brain* were distended with serosity; and there was also a yellow-coloured gelatinous deposit under the *pia mater* at the base of the brain.

Dr. Schoenlein attributes the death in this instance to the cerebral changes. He considers that the appearances found in the bowels—viz., the traces of healing in the ulcerated points on the mucous surface—may fairly be considered as evidences in favour of the use of Colomel; although it does not *prevent*, it seems to *moderate*, the severity of the intestinal eruption.

(*Remarks.*—There are several points in this case that deserve notice. Schoenlein's condemnation of emetics in the early stage of Typhus, and his reasons for so doing, are not at all satisfactory. In our opinion, they are quite fallacious, and appear to be founded much more on his theoretical views of the disease, than upon the results of actual observation. Nature herself often points out the practice that should be followed; and how decided is the relief that is generally obtained by free and copious vomiting! For our own parts, we cannot too strongly recommend the administration of an emetic at the commencement of almost all fevers. The practice of giving scruple-doses of calomel in mild cases of Typhus is not likely to find favour with the British physician: moderate and repeated doses of the hydrarg. c. creta, to which a few grains of carbonate of soda may be added, with grateful effervescing draughts in the intervals, will be generally preferred.—Schoenlein seems to be haunted every moment with the danger of *dothienenterite;* and yet his patient died, he admits, of cerebral effusion, and not of any intestinal lesion.—Query. Ought the case therefore to be called one of *typhus abdominalis?*—Blood-letting in any form, is seldom or ever admissible for the relief of the comatose affection in the advanced stage of Typhus.—The doctrine of "critical days," is, it will be observed, much insisted upon.)

SECOND CASE.—*Typhus Abdominalis—Thoracic Affection—Epistaxis—Emaciation of Typhus Patients—the Blood in Typhus aud in Chlorosis—recovery.*

A young man, when admitted, exhibited the usual symptoms of mild Typhus. The cerebral disturbance having been at the first more severe than the abdominal, he had been bled from the arm in consequence. There was little or no pain, but only a rumbling, in the cœcal region. A slight pneumonic affection existed on the left side; it was indicated by a somewhat increased dulness upon percussion, by the presence of a moist rhonchus, and by the sputa being a little tinged with blood. As the fever had

already existed nearly 14 days, the treatment was directed chiefly with the view of promoting a critical eczumation from the Skin by the use of mild diaphoretics; and, for the purpose of relieving the pulmonic disorder, 2 grains of *Muriate* of *Ammonia*, with ⅓ of a grain of *Camphor*, were given every two hours. Two days subsequently, an Epistaxis supervened: Schoenlein regarded it as of a "critical" nature. When this hæmorrhage is excessive, he advises that the nostrils should be plugged with lint dipped in *Aqua Thedeni*, that Alum be administered internally, and that sinapisms be applied to the surface to produce irritation of the peripheral nervous system. In the present case, these remedies were not called for. For the purpose of acting upon the skin and lungs, the *mur. ammon.* with *sulphur. aurat.* was given: and some mercurial ointment was rubbed in over the lower lobe of the left lung. But, as next day the chest symptoms were rather increased than diminished, a few ounces of blood were then drawn from the affected side by cupping: the blood thus obtained was very thin and watery: when examined with a microscope, it was found to contain a much smaller proportion of red globules than exists in healthy blood.* The *objective* (auscultatory) as well as the *subjective* (rational) symptoms were decidedly relieved by this practice. In reference to the very mild character of the abdominal symptoms in the present case, Schoenlein remarks:—

"The alvine evacuations are in no way pathognomonic in this disease, as some writers have maintained; and it requires that we should be well acquainted with the anomalies that are apt to occur, in order that we may not, by their mere absence, be led into error. Notwithstanding the long (for three days) constipation, and the absence of pain or any rumbling noise in the region of the cæcum, there are doubtless (in the present case) certain lesions of the intestinal mucous surface present."

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* Schoenlein on this occasion remarks that the result of this examination was quite in accordance with his opinion as to the nature of Typhus fever, which he regards as "a blood-disease or a hæmatosis, essentially distinct from inflammation." Besides a deficiency of Fibrine and Albumen, the proportion of the red globules is often very sensibly diminished in Typhus. The blood in the present case was examined by Dr. Simon, and the following are the results of his analysis.

| Healthy blood. | | Blood of this Patient. |
|---|---|---|
| 791 | Water | 887,5 |
| 208 | Solid contents | 112 |
| 2,0 | Fibrine | 0 |
| 76 | Albumen | 54 |
| 112 | Blood-globules | 47,25 |

There are several reasons that make us believe that there is a decided change in the colouring matter of the blood in Typhus—viz.: the formation of the dark pigment on the teeth, lips and tongue, the stained appearance of the inner surface of the blood-vessels and of the intestines, and especially the state of the urine. Dr. Simon has found, in the deep coloured urine of a Typhus patient, the colouring matter of the blood and uric acid in combination with a basis.—Dr. Schoenlein accounts for the greater emaciation, and the much slower recovery of the strength after an attack of Fever than of Inflammation, in which a large quantity of blood may have been lost, by the circumstance of the greater *deterioration* of the blood in the former instance.

It here deserves to be remarked that the physician should never trust to the mere feelings of a patient, or to the answers which he gives to questions, touching the existence and severity of his abdominal and thoracic symptoms; for these are often, as it were, disguised, and thus are apt to be sometimes entirely overlooked. Nothing, therefore, but an "objective examination," every day, should satisfy the judicious practitioner. This is more especially necessary, as the visceral affection is often observed to oscillate, or alternately to subside and to be excited, several times in the course of an attack of Typhus fever. In the present case, after a *lull* of five days, the thoracic affection was again aggravated, the *rhonchus sibilans* being again heard on the left side, and being now accompanied with a slight crepitating noise. As it would seem from this that the Bronchitis was in some degree complicated with Pneumonia, 8 ozs. of blood were drawn from the arm, the cupping-glasses applied to the chest, and frequent doses of *Nitre* and *Sal Ammoniac* administered. Under such circumstances, we must be on our guard lest the pneumonic inflammation pass into the suppurative process; for this is an accident that is occasionally observed to occur in protracted typhoid affections. The symptoms were considerably relieved by the use of the remedies employed; the *sibilant* had changed more into the *mucous rale*, &c. But, as the cough was still dry, harsh and ringing, and as no decided critical evacuation, nor any local crisis had taken place, it was deemed advisable to have the mercurial ointment rubbed in upon the chest, especially between the shoulders. What we desire to find is, that the moist rhonchus may be heard over a wider extent of the chest, also that the cough may become looser, and that the sputa assume a more globular and distinct character. The febrifuge expectorant mixture—half-a-drachm of *nitre* and the same quantity of *Sal ammoniac* in six ounces of emulsion—was ordered to be continued. The symptoms gradually gave way, and the patient eventually was restored to health.

Schoenlein remarks that it has been only of late years, that the attention of the physician has been specially directed to the not unfrequent existence of a latent pulmonic affection in cases of Typhus fever. The *subjective* symptoms of this complication are usually not very prominent or striking; and it is therefore only by the aid of the *objective* phenomena, as disclosed by Auscultation, that our diagnosis can be accurately formed. It is to M. Louis, more than to any other pathologist, that we are indebted for our more exact information upon this subject. He has most convincingly shown how apt Pneumonia is to supervene, when we little suspect it. Too often it passes on into phthisical disease, especially in those persons in whom there exists any constitutional tendency to this malady. The frequency of chest complications in Typhus varies much in different seasons. Hence the importance of studying the epidemic and endemic constitution of each fever, with which we have to do.

(*Remarks.*—In spite of his bias to the abdominal pathology of Typhus fever, Schoenlein expressly recognises the importance of studying the changes and abnormal condition of the fluids.—The occasional complication of pulmonic inflammation, it is of the highest importance to be

aware of. In the treatment of the present case, we miss the use of two very important remedies—the tartrate of Antimony and Blisters.)

In the *third case* of (what is still called) "abdominal typhus," the points most worthy of notice are these. An emetic had been given to the patient before his admission into the hospital; and, as after its administration a loose state of the bowels supervened, Dr. Schoenlein inferred that it had accelerated the eruption upon the intestinal mucous surface. Had this not been the case, he remarks, we might have hoped to have prevented its development by the use of Calomel: the disease having reached that point when its resolution by some critical evacuation is still possible, but cannot be, as it were, compelled. *Aqua oxymuriatica*, in a demulcent beverage, was ordered to be taken frequently.

There was an unusual tendency to exhaustion and syncope in this patient whenever he sat up. This peculiarity Schoenlein regarded "as a pathological equivalent of the intermittent fevers, which are strikingly rare this Spring." "I have," he continues, "at the present moment under my care a patient, in whom his usual Spring attack of Ague is replaced by a regular and periodic return of faintishness."

### *Relation between Typhus and Intermittent Fevers.*

That Typhus Fever and Ague are often very closely associated, more especially as respects their genetic cause—the former so frequently springing from the latter—is well known to those who have practised in marshy districts. The truth of this remark was abundantly witnessed in the great epidemics, which prevailed in the North of Europe during the years 1827 and 1828. One example will suffice. Where the Rhine opens into the Bodensee, the stream of the river becomes as a matter of course nearly still, and there Malaria is generated and Agues abound; but in Appenzel, where the land becomes more elevated, there are no Agues, but often a most destructive form of Typhus fever prevails.

This subject of pathological relationship is one of such high practical importance, and withal so little attended to, that we shall make no apology for introducing the following remarks by our enlightened author:—

"These equivalents of intermittent fevers, as we may call them, generally shew themselves in this manner. The affection appears at first only as an inconsiderable irritation of the gastric or bronchial mucous membrane, perhaps as a trifling catarrh; but there is always—and this symptom may have existed for some days previously—an unusual degree of powerlessness and general oppression. In young plethoric subjects, there is not unfrequently at the same time a discharge of blood from some part, to a greater or less extent: in women it is often an excessive flow of the menses—all indicative of a vitiated state of the fluids. In such circumstances, let the physician be on his guard: for it is not with a simple catarrh that he has to do. If having regard only to the loaded tongue, nausea, and headache, he administers an emetic or saline purgative, the

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* This truly Sydenhamian remark well deserves attention; and we are the more anxious that our readers should notice it, from its being so completely in accordance with those highly instructive observations of Dr. Harden, on what he has called the "Isopathia or Parallelism of Diseases:" vide our last No. p. 277. The very expressions used by the two writers are *equivalent*.

chances are that he inevitably hastens on and aggravates the development of the disease. During various epidemics, many cases have been observed by me where the patients have complained of little save weakness and tendency to fainting, without perhaps any symptoms of intestinal disturbance or any febrile excitement. Such cases were well known to the old physicians, who have described them under the appellation of *febres epidemicæ malignæ sine febre*.* Not unfrequently about one of the critical periods, usually the end of the third week, a violent vascular tumult (Gefass-sturm) is excited; and then either quickly subsides by some critical evacuation from the skin, kidneys, or bowels; or a rapid and perhaps fatal collapse ensues."

(The modifying influence of an agueish character or constitution upon the progress of continued Fevers is, as might be expected, most conspicuous in hot climates. As the modern French school of medicine is that which has most grievously erred in overlooking this important point of practice, we are always pleased to meet with evidences of sounder therapeutic views in the writings of our neighbours. The following passage, from a recent work on the Diseases of Brazil, may be not inaptly introduced as a specimen of the wholesome change that is beginning to take ace in their pathology.†

"Experience has taught me, as well as others, to modify my opinions, and change my therapeutics, in the presence of a host of grave fevers, which I used to regard as symptomatic of inflammatory lesions of the liver, brain, or intestines. It has convinced me that, in those countries, where the *agueish principle* predominates, every thing is subjected to its action; and therefore that to persist in the employment of antiphlogistic remedies in those countries, especially when an epidemic of grave intermittent fever exists, is to cause almost inevitably the death of our patients. For the last twelve years, I have been satisfied of the truth of this: before that time, I held the exclusive doctrines of Broussais, who used to quote me as a zealous follower of his doctrines in South America. It has cost me much regret to separate myself from the school of this puissant genius, but facts speak louder than any doctrine can do; and I am bound to proclaim the infallible efficacy of the sulphate of Quinine in the treatment of intermittent fevers, even in their acute stage.")

CASE 4.—*Typhus Abdominalis, nervosa, stupida—Pneumonia—Epistaxis—Threatening of Œdema Glottidis—Ammoniacal Urine—Parotitis—Recovery.*

A man, 23 years of age, was admitted into the hospital, with the ordinary symptoms of Typhus: according to his report, he was in the beginning of the second week of the fever. The headache had been so severe as to require the application of leeches. Although the patient made no complaint of any thoracic ailment, Percussion and Auscultation showed that there was incipient inflammation of the posterior part of the right lung; the sound that was elicited over it being duller than usual, and a

* It is in such cases, where the symptoms are so obscure and ill-marked during life, that *inflammationes occultæ* in the viscera are so often met with upon dissection.

† Du Climat et des Maladies de Bresil, ou Statistique Medicale de cet Empire, par J. F. Sigaud, Medecin de S. M. l'Empereur dom Pedro II Paris, 1844.

distinct crepitation being audible whenever a deep inspiration was taken. As usual with cases in which the cephalic symptoms are dominant, the abdominal ones were indistinctly marked. Schoenlein dwells, very emphatically, upon the importance of the medical attendant not allowing his judgment to be influenced solely by the amount of uneasiness or the degree of pain in the abdomen; as he has repeatedly seen, upon dissection, most serious and extensive intestinal lesions in cases where the abdominal symptoms had been masked or obscured by the predominance of the cerebral oppression. It is this form of Typhus, of which the present case is an example, that Frank characterises as the *febris nervosa stupida*. In consequence of the thoracic symptoms, the patient was ordered to be bled to ten ounces from the arm, to be cupped over the inferior part of the right lung behind, and to take repeated doses of nitre in an oily emulsion.

On the subject of *blood-letting in Typhus fever*, Dr. Schoenlein thus expresses himself.—

"I do not partake the opinion of those who would make this fever to consist in an inflammation of any one part or organ of the body, whether this be supposed to be the brain, or the entire nervous system; or the mucous membrane or glans of the intestines; or the endocardium, &c.; nor can I admit, with some writers, that it is to be cured by the use of blood-letting. The doctrine of Bouillaud is downright nonsense, and his practice is little better than murder. And yet it is no doubt quite true that the *genius* of some epidemics is decidedly inflammatory, and may require tolerably copious depletions.

"There are cases in which blood-letting cannot be dispensed with, in consequence of an existing inflammatory affection of certain internal organs. But the greatest judgment is required in its adoption. I have seen cases in which, in consequence of the fever setting in at first with all the symptoms of Encephalitis, free blood-letting was practised; and the result was a rapid collapse, followed speedily by death. In one case of this sort, not the slightest trace of cerebral mischief was discoverable on dissection, and the only lesion found was the usual typhous affection of the bowels. In exanthematous fevers, and especially in Small-pox and Scarlatina, the head-symptoms are often very severe before the eruption has made its appearance on the surface. Perhaps something similar takes place in Typhus. In all cases, therefore, where the headache is very severe, it is better, first of all, to cause a derivation of the vascular action by means of sinapisms to the feet, and of enemata of vinegar, than to have immediate recourse to sanguineous depletions. The only circumstances, which can justify the employment of venesection in Typhus, are the accession of Pneumonia, or the existence of strong pressure upon the Brain."

And even when these phenomena are present, it will much depend upon the general character of the existing epidemic, and on the constitution of each individual patient, whether we should have recourse to general or local blood-letting to relieve the oppressed viscera.

In the present case an Epistaxis supervened, and all the cerebral symptoms were observed to be subsequently much relieved: this hæmorrhage, therefore, was of a truly critical nature. There being still some degree of mucous *rale* perceptible over the basis of the right lung, small doses of *Sulphur. aurat.*, in combination with *sal ammoniac* were ordered. In proportion as the thoracic and cephalic symptoms subsided, those appertaining to the abdomen became more conspicuous: the tenderness of the cœcal region, its gurgling upon pressure, and the setting in of a slight diarrhœa,

abundantly testified where the chief peccant cause now lay. The *alum-whey* (which had been prescribed for the Epistaxis) was continued; clysters of starch with opium were administered; and mercurial ointment was rubbed in over the region of the cæcum.

*Necessity of a guarded Prognosis in Fever.*

As long as the Typhoid process exists, the physician should be on his guard not to regard his patient as convalescent, however mitigated the existing symptoms may be. A complication—as, for example, an inflammatory condition of the lungs—may be entirely absent or subdued to-day; and, in the course of two or three days, it may return without any appreciable exciting cause. Thus it was in the present case. After some days' entire subsidence, the auscultatory pneumonic symptoms returned; but now upon the *left*, not the right side. Some blood was taken from the part by leeches, with marked advantage. The importance of the Stethoscope, in regulating our treatment in many cases of Typhus, cannot be too highly estimated.

A slight aphthous state of the fauces having made its appearance, a gargle composed of Chlorine solution and Alum, was ordered to be used frequently. Next day, the left tonsil was observed to be swollen and œdematous. The progress of this guttural affection should always be very narrowly watched, as one of the most formidable diseases to which mankind is subject—*œdema glottidis*—may, under such circumstances, suddenly supervene, when no danger is apprehended. It is especially apt to occur in certain exanthematous fevers; viz., Small-pox, Scarlatina, and Measles. Dr. Schoenlein regards the use of acid and alum gargles as one of the most efficacious means, if early employed, to arrest the progress of this most dangerous affection. We may here remark that it is by no means uncommon for an aphthous or ulcerated condition of one or more of the mucous outlets—the nostrils, throat, eyes, ears, rectum, and vagina—to occur during the progress of, and convalescence from, an attack of fever.

As there was a threatened relapse of the Typhoid symptoms—uneasiness and distension in the cœcal region, dry skin, accelerated pulse—the *aqua ozymuriatica* was prescribed, and a tepid affusion was ordered to be used at bed time. The patient not being relieved next day, 12 leeches were applied over the cæcum, and the warm-bath repeated. The great frequency of the pulse at this time rendered the prognosis more unfavorable than we might have been inclined to come to, judging from the other symptoms; for it may be laid down as a general position, that, whenever the pulse keeps above 120, we have much cause to apprehend the ultimate result of any fever. Nevertheless there are exceptions to the truth of this remark; and it is therefore only by carefully attending to all the symptoms collectively, and not to any one in particular, that the physician can form a correct judgment of the probable issue.

No sooner had the guttural and abdominal affections subsided than symptoms of Bronchitis, on the right side, made their appearance; dry sibilant rhonchus, and distressing cough: the sputa were not at all tinged with blood. The cupping-glasses were applied over the affected part, and small doses of *nitrate of soda* and *muriate of ammonia* were given every two hours. Next day, the left parotid gland (it is curious that Parotitis and

also suppuration of the internal Ear are much more frequent on the left, than on the right, side) was swollen and inflamed. Schoenlein recommends the application of leeches and mercurial frictions for the relief of this symptom: he disapproves of rubefaciants and other local irritants.

The Urine, which in the early stage of this case was deep-coloured and strongly acid, had now become sedimentary and so alkaline, that, when a glass-rod dipped in muriatic acid was held over it, vapours of muriate of Ammonia were immediately perceptible. This state of the urine was well known to the old writers, who termed it "lixivial." Whether it is connected, in such cases as the present, with an injury of the functions of the cerebro-spinal axis, we are not prepared to say; certain it is that it is a not uncommon attendant upon lesions of the great nervous centres. The deposit was found, by the aid of the microscope, to contain numerous crystals of urate of ammonia, and of the ammoniaco-magnesian phosphate. The *aqua oxymuriatica* and a mild *decoction of cinchona* were prescribed; and light nourishing food was given frequently. In all cases of protracted Typhus, where the strength and flesh are much wasted, it will be prudent that nourishing clysters of milk, soup, &c., be regularly administered. As we have remarked before, the loss of power and substance, which the system sustains during the progress of a continued fever, and the consequent emaciation and exhaustion that take place, are much more considerable than after almost any other disease. Before the convalescence of our patient was fairly established, the right parotid gland also became inflamed and threatened to advance on to suppuration. For a considerable time the pulse remained at a high rate, and there was always more or less cough each night and morning; these symptoms demand, as a matter of course, watchful care; as there is very often a decided tendency to the setting in of phthisical diseases after Typhus, as well as after the Exanthemata. In the present case, they gradually subsided, and the patient was eventually restored to perfect health.

*The varying Conditions of the Urine at different times of the same day.*

In reference to this point—which is one that demands the assiduous attention of the physician—the following remarks may be read with profit:—

"The urine voided in the evening exhibited very different characters, chemical as well as physical, from that which was passed in the morning; the former was turbid and alkaline, while the latter had an acid re-action, and was of a normal appearance. Unless attention be paid to the state of the secretions at different periods in the twenty-four hours, the practitioner may be led into very serious errors. In affections of the Liver and Spleen, we have often occasion to observe the important fact, that the urine, voided after a meal, exhibits abnormal characters, while at other times it may seem to be altogether healthy. In affections of the Kidney, too, we also find—which we should certainly not expect—this peculiar appearance: the urine, which is voided at night, frequently contains a considerable quantity of matter; while that voided during the day, may contain little or perhaps no trace of it. In Diabetes, the urine passed at bed-time, and after a meal, often contains much saccharine matter; and yet there may be scarcely any trace of it at other times of the day. The old physicians were much more in the habit of attending to these varying phases of the urinary secretion than the modern ones. In the case at present under consideration, the urine passed at bed-time continued to exhibit the *critical* condition which had been noticed for

several days previously; whereas, that passed in the morning, appeared to be altogether healthy."

The *fifth* case was one of Typhus *nervosa lenta* vel *versatilis*,* characterised chiefly by distressing irritability of the nervous system, without, however, the symptoms of any grave lesion of the brain, chest, or abdomen. Schoenlein recommended clysters composed of *infus. Valerianæ* and *Castoreum*, and the following mixture to be taken in ounce doses every two hours.

℞. Infusi Valerianæ (℥ ij.) ℥ iv.
Mucilag. Salep. ℥ ij.
Acid. Muriatic. ℥ j.
Syrupi Simpl. ℥ j.

Opium is in most cases of this sort not only useless, but positively hurtful.

In recovery from this form of Typhus, our author remarks that there is not unfrequently an inordinate excitability of the generative organs; and he recommends, in consequence, that not only the patients, but also that their nurses, should be carefully watched. "I have so often," says he, "had occasion to witness the misfortune of this precaution being neglected, that I cannot insist upon it too much."—In some cases, during the period of convalescence, the craving for food is so great that it amounts to *bulimia*, and must be regarded as a positive disease. Under such circumstances the physician should very narrowly watch the progress of the case, especially if there is reason to believe that the intestinal ulcers are not completely cicatrised. On this subject—one of the great practical as well as pathological importance—we are presented with the following observations by our experienced author:—

### *The Cicatrisation of the Intestinal Ulcers.*

"The process of the healing of intestinal ulcerations, in cases of Fever, usually commences about the end of the third week, and continues for a greater or less length of time, in proportion to the severity of the typhoid disease. In mild cases, it is generally completed by the end of the fourth or fifth week; but in severe ones, not for three or four weeks afterwards. The patient cannot be considered out of danger, until this process be entirely over. Before this period, how easily are the typhoid symptoms renewed by an irregularity of diet, by exposure to cold, &c.! —not that the relapse is owing to the development of any new lesion of the intestinal surface, but only to the fresh irritation that has occurred in and around it, and which is accompanied with an asthenic fever. In some unfortunate cases, the

* Reil has described what he calls "Irritable Typhus;" the most prominent characters being great sleeplessness, loquacity, twitching of the tendons, &c.: the urine is generally clear and abundant. Occasionally, severe crampy affections of various muscles will occur in the course of such fevers. If the Heart or Larynx, or Diaphragm be so affected, death may take place most unexpectedly, Trismus, Tetanus, and even Hydrophobia, with its peculiar convulsive difficulty of swallowing, have been known to occur and prove rapidly fatal. Schoenlein alludes to a case where the muscles on the back of the neck were affected with most distressing involuntary movements: at one time it was apprehended that cerebral disorganisation was going on; but this alarm proved groundless.

ulceration eats deeper and deeper, until a perforation is made through the intestinal parietes.

* * * What are the phenomena which indicate that the process of intestinal cicatrisation is completed?—1, A cessation of all tenderness and rumbling noise in the right iliac region after eating, as well as at other times; 2, the disappearance of pus-globules from the alvine evacuations; 3, the cessation of all feverishness in the evening, and just before midnight; and 4, the arrest of further emaciation, and the gradual recovery of flesh and strength."

(These observations should be read, marked, learned, and inwardly digested by every medical man, who desires to carry his patients through the dangers of the convalescent, as well as of the earlier stages of typhus fever. Whether there be intestinal ulcerations or not—and we are decidedly of opinion that they are by no means so constant phenomena as Schoenlein believes—too much attention cannot be paid to ascertain the condition of the abdominal viscera, by daily examining the abdomen with the hand, and watching the state of the evacuations during the recovery from this insidious disease.)

CASE 6.—*Typhus Abdominalis—different Kinds of Cerebral Irritation in Fever—Affection of the Larynx—Episodes in the course of Typhus—unequal Distribution of Temperature—Death—Dissection.*

In the present case, the abdominal symptoms were the most prominent, and were evidently those which threatened the chief danger, although the lungs and brain were not entirely exempt from disturbance. A dozen of leeches were applied over the cæcum; and the *aqua oxymuriatica* administered in injections as well as by the mouth:* a warm-bath, after the leeches, was ordered. The stupor and cerebral oppression rapidly increased in gravity, and consequently attracted much of the attention of the clinical professor. The following observations on the *nervous or cerebral symptoms in Typhus fever* were suggested by the state of the patient at the time:—

"I am satisfied that they spring from very different causes, and therefore require very different treatment in different cases. 1. There is an irritation of the Brain and nervous system which usually appears on the third or fourth day of the disease, and which, in my opinion, is contemporaneous with the development of the intestinal eruption; it may therefore be regarded as altogether analogous to the cerebral disturbance that usually precedes and accompanies the appearance of the rash or pock in the genuine exanthemata. This affection of the brain is usually manifested by symptoms of acute excitement; such as delirium, redness of the face, hot skin and full pulse. It subsides or altogether ceases as soon as the eruption of the intestinal mucous surface has taken place; this is generally about the seventh day. 2. A second form of cerebral irritation occurs at a later period, and depends upon a state of congestion that, in its nature, approaches a good deal to that of Inflammation. When present, the fever exhibits the type of what has been called *cerebral Typhus*. It often appears early; but in some cases not till the seventeenth or eighteenth day. 3. Another kind

* This acid was given, it is stated in the report, to counteract the general or constitutional morbid process:—as an antiseptic or corrigent of the vitiated fluids, we suppose.

evidently proceeds from the abdomen as its origin; depending on the formation of ulcers in the bowels, just in the same manner as cerebral irritation in children is so often connected with the presence of Worms. 4. A fourth form occurs at a later stage of the disease, when the crises have already taken place; this form is similar to the cerebral irritation in persons who have suffered from profuse discharges. The prominent symptoms are delirium and wakefulness.

"The *treatment* of the inflammatory or hyperæmic forms, especially of the *second* enumerated above, consists, as a matter of course, in the use of local bloodletting, cold lotions, and derivatives; of the *third*, or abdominal form, in the employment of sedatives and anti-spasmodics, given in injections as well as by the mouth; and of the *fourth* in the exhibition of bark, nourishing food, &c.

"It thus appears that the same phenomenon, occurring in the course of the same morbid process, may have a very different indication in the eye of the practical physician; and it is therefore a perfect folly to regard it always as of the same nature, in the manner that Marcus and so many of the modern French school have done. It is of paramount importance that, in each individual case, good care be taken to make out the real nature of the existing cerebral irritation, so as to determine upon the line of practice to be adopted. In the present case, it is obviously connected with the affection of the intestines; and accordingly, an enema of an infusion of *valerian* with *castor*, and a warm bath, were ordered."

Subsequently, it was deemed necessary that leeches should be applied to the temples, in consequence of an aggravation of the head-symptoms supervening. At this period the feet were cold, while the head was every now and then hot—a most unpleasant and unfavourable symptom. The tongue was of a dark reddish-brown hue. Dr. S. ordered that a tablespoonful of the following mixture be given every two hours.

℞. Infusi Cinchonæ et rad. Angelicæ ℥iv.
Mucilagin. Salep. ℥ij.
Acid. Muriatic. ℥j. M.

In the course of a day or two afterwards, symptoms of an inflammatory affection of the Larynx supervened. In some cases, this proves rapidly fatal perhaps by inducing *œdema glottidis*; while, in others, it terminates in *phthisis laryngea*—a disease which, as a matter of course, invariably causes death. The laryngeal affection is sometimes accompanied with most distressing spasmodic contractions of the muscles of the neck; and this spasmy state may extend to the pharynx, and give rise to symptoms of Hydrophobic dysphagia. Leeches, sinapisms, and mercurial frictions were ordered. These means had the effect of decidedly mitigating the local distress; and, for a day or two, the general symptoms appeared to be somewhat more favourable. But the amendment was only temporary, Castor and Musk were given repeatedly; and a bath, prepared with aromatic herbs, was ordered.

The patient died about the end of the third week of the fever. On *dissection*, were found "the usual appearances on the mucous coat of the intestines, considerable points of ulceration not yet cicatrised." The surface of the throat, pharynx, and the whole length of the œsophagus was covered with a lining such as we find in *angina gangrenosa*, or on the surface of ulcers affected with *hospital gangrene*.

In the Appendix, at the end of the volume, are some useful practical remarks in illustration of the various cases whose reports are given, or

of the general history of Typhus. We have selected those which appear to be the most valuable.

*Diarrhœa and Cœcal pain not always present in Typhus.*

Although a certain degree of Diarrhœa is very generally present in this fever, it is by no means an invariable symptom. It may be absent, just as we sometimes see that there is no cutaneous exanthem in Scarlatina; no cough in Pneumonia, or in Phthisis, even when large vomicæ exist in the lungs; no vomiting in Scirrhus of the Stomach, &c. Occasionally, too, there is no tenderness whatsoever in the cœcal region. The cause of this may be, that the affected intestine is more deeply seated than usual in the pelvis, and may thus be withdrawn in a great measure from the pressure of the finger; or that the patient is more or less comatose, and does not understand, if he hears, the questions that are put to him. To return for a moment to the state of the alvine evacuations, we may remark that, if the fever proves fatal before the scabs (of the intestinal ulcers) are detached, there may be complete constipation present; and the tendency to this occurring will be increased, if there be any unusual tumefaction, as sometimes happens, of the ilio-cœcal valve. "You thus see (Dr. Schoenlein is addressing his clinical pupils) that, as I have frequently remarked, there is no individual pathognomonic symptom of the disease, and that no single phenomenon can determine anything with certainty. It is only the correlation of different symptoms one with another, and the mutual influence and reciprocal restraint and modification which they exert upon each other, that can lead to any satisfactory conclusions as to the therapeutic management, as well as the final issue, of each case."

The presence of a slight Diarrhœa in Fever is not to be regarded as necessarily an unfavourable symptom; it is such only, when it exceeds certain limits; and then it usually depends upon an irritation being established around the new formation (on the intestinal mucous membrane,) which must become loosened and detached. When this is the case, the stools are usually watery and slimy. It will often be prudent to examine the intestinal evacuations with the Microscope; as in this way we shall be enabled to detect the presence of certain matters, which might otherwise escape detection. The admixture of pus-globules, and of epithelial scales, satisfactorily proves that the process of intestinal cicatrisation is not yet completed.

*Influence of Cutaneous Eruptions on the Development of Typhus.*

It has been asserted by some writers that the existence of Scabies is an almost sure preservative against the invasion of this fever. We have observed, says our author, that the presence of Impetiginous eruptions (especially those of a moist and purulent character) seems to afford considerable security against the *petechial*, but little against the *abdominal*, form of Typhus; our extensive experience in the years 1814 and 1815 led us to adopt this conclusion. The cutaneous eruption, it may be remarked, often exhibits very considerable modifications in its appearance, in those persons who are exposed to the febrile miasm. If, however, the fever is caught, then the eruption becomes more or less completely dried up; and this change may be either permanent, or only temporary during the existence of the febrile

process in the system—the eruption again making its appearance, when the fever has passed away.

*Critical Evacuations—Urine—Perspiration.*

Much stress is repeatedly laid upon the observance of the proper critical days, more especially the 14th and 21st; so that the treatment employed may tend to promote, and not to check or arrest, any critical evacuation which Nature may design to take place at those epochs of the fever. It is very often observed that the Urine undergoes a very remarkable change about the 21st day of the disease; passing then from an *acid* to an *alkaline* condition, depositing the earthy phosphates, and occasionally also the carbonate of Ammonia. Whenever this takes place, we may regard it as a favourable symptom, and indicating the resolution of the fever. Should there be, at the same time, any tendency to free perspiration, it will be well to promote this effort of Nature by tepid or warm baths, the use of which will serve to promote the separation of the detached epidermis.

It occasionally happens that, on the day preceding the critical resolution, there is a marked exacerbation of febrile re-action: however, no artificial means should be used to accelerate this event. It is a natural process; and the less it is interfered with the better.

There is sometimes a very marked remission of all the febrile symptoms in Typhus fever upon the *seventh* day of the disease; the skin becoming moist, the urine turbid, the pulse quiet, and the tongue tolerably clean: perhaps also an Epistaxis takes place at the same time, and this might very reasonably be regarded as a *critical* hæmorrhage. On the morning of the eighth day, the patient may feel himself so well that he begins to think that he is convalescent; and yet, before evening, a new storm may arise, and from this date the nervous *stadium* or stage is often observed to commence. * * * * * * *

Much mischief is often done by interfering too much with the course of the Typhous process in its stage of development, during the first week. The remedies usually employed for this purpose, are Emetics and Purgatives; on the injurious effects of which we have already more than once spoken. They are more especially to be deprecated about the fourth day of the disease, when the intestinal eruption usually takes place; as they must then necessarily aggravate the inward irritation, just as stimulant applications to the skin would do in any Cutaneous Exanthem. Not only in genuine Typhus, but even in other diseases which happen to occur during the prevalence of this fever, we cannot be too cautious in the administration of emetics and purgatives; as there is then always a strong tendency in these diseases to assume a Typhoid character. Dr. Stokes has remarked that the injudicious use of purgative medicines, by patients recovering from Typhus fever, is apt in some cases to induce a perforation of the bowels, at the seat of the ulcers upon their mucous surface.

*Necessity of Caution in the Convalescent Stage, Causes of the great Emaciation after Fever.*

Too much attention cannot be paid to the state of the bowels, and of the urinary secretion, during the period of convalescence from fever—a period that may be dated from the cessation of the critical stage, which

usually lasts from four to seven days. The intestinal ulcerations necessarily require some time before they are completely cicatrised; and the slightest irritation, whether from irregularity of diet, exposure to cold, and so forth, is apt to be followed by an immediate recrudescence of the pyrexial symptoms. Again, as long as there is the slightest tendency to the return of any evening feverishness, the state of the patient must be very narrowly watched. With respect to the urine, it is of importance that it be neither deep-coloured and having a strong acid re-action; nor inclined to be turbid, with an alkaline character; nor yet too pale and abundant, as it is apt to be in anæmic hysterical complaints.

The causes of the excessive Emaciation (some writers have termed it "typhous marasmus,") that is usually induced by Fever, are various. For example—1. There is the *lesion* of the *mucous membrane* of the intestines, and the consequent disturbance to the processes of Chylification and Absorption: the *villi* on the regenerated membrane are, for a length of time, much less numerous than before the ulceration. 2. Then again, the *mesenteric glands* are often more or less enlarged, if not inflamed; and the necessary consequence of which must be a partial obstruction to the free passage of the chyle through them. 3. Lastly, there may be a change or lesion of the nerves of Nutrition (of the solar plexus, more especially;) and consequently a disturbance of the innervation of the organs which serve for this important function. (It seems strange that, in the enumeration of the causes of the excessive loss of flesh and strength usually experienced after an attack of Typhus fever, Dr. Schoenlein has here made no reference to the very serious alteration that the circulating fluids have undergone, in the course of the disease.)

*Dissolved State of the Blood—Hypostatic Congestion of the Lungs.*

There are not many allusions in these Reports to the altered state of the circulating fluids in Typhus fever. Among the notes, we find the following short paragraph:—

"In two cases, we found an unusual degeneration of the Blood: in the heart, there was not a trace of any fibrinous coagulum; the blood was still entirely fluid, although 24 hours had elapsed from the period of death: a large quantity had transuded through the walls of the vessels into the abdominal and thoracic cavities. This is the highest degree of what has been called the 'typhous dyscrasis of the blood;' in the present case, it seemed to be connected with the excessive evacuations that had been practised in the early stage of the fever."

One of the consequences of this morbid Fluidity of the Blood is a tendency to its accumulating and becoming congested in the posterior or decumbent parts of the body, and especially in the posterior portion of the pulmonary parenchyma—giving rise to what has been called a *hypostatic congestion of the lungs*. If, under such circumstances, the physician trusted entirely to the character of the auscultatory signs, he might be led into a most dangerous therapeutic error. A well-marked crepitating noise may be heard, as in genuine Pneumonia; and yet the use of any depletory remedies might prove rapidly fatal. Wine, bark, and ammonia must, as Dr. Stokes has justly remarked, be freely administered: whatever most effectually counteracts the dyscrasis of the blood, will be the best corrigent of the sanguineous infiltration of the lungs. The physician cannot be too much on

his guard, against regarding the hyperæmic condition of certain organs in Typhus fever as examples of pure inflammatory action, and treating it accordingly by active depletory measures. The lesions of the intestinal mucous surface have been considered by some as of an inflammatory nature; and with what results is generally known. In reference to the thoracic symptoms also, the greatest caution must be employed; as, even in some cases where blood has been expectorated, blood-letting must on no account be resorted to, and by far the best remedies are bark and sulphuric acid.

*Tendency to Meningitis, and Suppuration of the Ear or Parotid Gland.*

The persistence of cephalic uneasiness, after the other phenomena of Typhus fever have disappeared—especially if, at the same time, there be great tenderness of one part of the skull upon pressure—has been generally regarded as a very unfavourable symptom. If the seat of the pain be in, or very near to the ear, there is the danger of an internal suppuration taking place; not a few patients have died from this cause, after an attack of typhus.

In other cases, one or both Parotid glands become the seat of a troublesome suppuration. The tendency to these glands being affected varies very much in different epidemics. In some seasons we rarely meet with a case of this complication; in others, every typhous patient is more or less affected with it. The same remark holds true of Scarlatina; in one epidemic Angina parotidea is an almost invariable symptom: in another, it is very rarely present. Even in Syphilis and Gonorrhœa we observe a similar diversity in their complications. Sometimes a bubo occurs in a large majority of cases; while, at other times, it is only of occasional occurrence.

An unusual or *excessive acuteness of the sense of Hearing* has been considered by many writers as a bad omen: P. Frank looked upon it as a fatal one. Without going so far as this, it is certainly a symptom that indicates, if not the actual existence of, at least the tendency to, some serious lesion of the encephalon or its membranes.

*Enlargement and Softening of the Spleen.*

It has been asserted by some writers that an enlarged and softened condition of the Spleen is a very constant, if not an essential, accompaniment of Typhus fever; and long lists of cases have been brought forward to support this pathological doctrine. The facts may be quite true; but the inference drawn from them appears to be erroneous. The occurrence of this complication depends very materially upon the locality or region where the fever exists. For example, it is very frequent in Holland and all marshy countries, where the malaria of agues abounds. Moreover it is well known that, in most persons who have suffered severely from intermittent fever, the spleen is usually left more or less enlarged above its natural dimensions. We cannot wonder then that, if such persons catch Typhus—a disease in which there is always a tendency to visceral congestion—this enlargement, or hypertrophe as it has been called, should be considerably increased. But that it is by no means a constant accompaniment of this fever, we can have no hesitation in asserting: indeed, it is only in a few cases, according to our experience, that it is really present.

Andral has come to a similar conclusion on this question; viz., that the enlargement of the spleen is not a constant symptom, but only an accidental one—attributable in part to some peculiarity in a patient's constitution, and in part to local or epidemic influences. The complication, when it does exist, must be regarded unfavourably; for there is not unfrequently in those patients, in whom it exists, a great tendency to internal hæmorrhage, more especially from the stomach and intestines. Occasionally the parenchyma of the spleen has become so soft and lacerable that it has actually given way, and thus a large quantity of blood has been extravasated into the cavity of the abdomen. As a matter of course, this is invariably a fatal occurrence.

*Treatment of excessive Tympanitic Distension.*

The accumulation of gas within the bowels has occasionally been known to be so great as to lead to the laceration or perforation of their walls at one point. The remedy, which I have found to be most effectual for the relief of this symptom, is a clyster of cold water: the cold contracts the bowels, and diminishes the expansion of the gas; while the water absorbs a portion of it at the same time. The injection may be frequently repeated.

*Miliary Eruptions in Typhus.*

There are some epidemics, in which a cutaneous eruption or exanthem occurs in every case, so that it has even been regarded as characteristic of the Fever. It is generally associated with other critical phenomena in the Skin or in the Urine; and may readily be distinguished from the Rheumatic Miliaria, inasmuch as the fluid in the vesicles is in the former case alkaline—analogous to the alkalescence of the urine—whereas, in the latter, it is always more or less distinctly acid.

The miliary eruption in a Typhus fever is to be viewed as rather a favourable symptom than otherwise.

There is another form of miliary eruption, which, upon a cursory examination, might be considered as of the same nature; but it is not. It consists of vesicles under the epidermis, usually very small, and almost microscopic; they are felt as minute papules or elevations through the skin. They contain not a liquid, but a gaseous (gasförmigen) fluid. Its true nature has not been ascertained: but it seems probable that it is Cyanogen; at least, in a somewhat similar phenomenon in the course of Smallpox, traces of hydrocyanic acid have been discovered.

This development of gas is usually accompanied with that of other unfavourable symptoms, indicative of the putrescence and dissolution of the blood.

The two sorts of Miliary eruption, alluded to above, should be very carefully distinguished, as their prognostic intimation is of very different import.

*Excessive Irritability during the Convalescent Stage.*

Not only after Typhus—especially that form of it in which the Sensorium is more particularly affected—but also after certain physiological acts or processes, such as Menstruation and Pregnancy, I have often had occasion

to observe so great a degree of irritability, that, in not a few cases, most unpleasant consequences have ensued. In Italy, and other southern climates, it is often unsafe to bring any strong-smelling flower into the chamber of a puerperal woman, in consequence of the impression thereby made on the nervous system, and the high vascular re-action that is apt to follow: a state approaching to genuine *apoplexia nervosa* has been thus induced. Any slight impression on the mind or feelings is apt to do the same, when the system is in a highly excitable mood. A sudden fear or surprise has often brought on an alarming Syncope, in a patient recovering from a severe attack of Fever. The disturbance of the sensorial functions after Typhus is sometimes so great, that the patient has completely forgotten all that he knew before the attack: it has even been known, under such circumstances, that an adult has been obliged to be again taught to read and write his own language.

*Is there really and truly a "Cerebral" Form of Typhus?*

If it be meant to be asserted that there is a distinct and well-defined form of this fever, which always sets in with the same phenomena (indicative of cerebral disturbance,) and which might be appealed to as a *silhouette* or portrait that was applicable to each case, we can have no hesitation in contradicting the assertion. "Cerebral Typhus" is nothing but a modification of "Abdominal Typhus," where the nervous symptoms —those, namely, which point out an affection of the encephalon—are unusually dominant, and exert a certain modifying influence upon the general character of the typhoid phenomena; just in the same manner as we find in other cases that the bronchial symptoms are more prominent than usual; and then the fever might be called "Broncho-" or "Pneumo-typhus." But it would be a grievous error to suppose that, under any of these circumstances, the mucous membrane of the intestines is wholly unaffected and intact. The degree and extent of this lesion may be different in different cases; but it is present in all.

II. The paramount importance of the subject of *Fever* must plead our excuse for having devoted so large a space to this subject. We now proceed to examine the most interesting cases of *Pneumonia* and *Pleuritis* recorded in these Reports. The first that we shall select is headed thus:

*Pneumonia in the upper Lobe of the right Lung—Simultaneous Affection of the Brain and Bowels—Difficulty of the Diagnosis—Absence of the subjective Phenomena—Superiority of the new Methods of Investigation—Inflammationes Occultæ—Recrudescence of the Pneumonia—Carditis—Recovery.*

A middle-aged man was brought into the hospital delirious and utterly incapable of giving any account of his ailments. His *head* was hot, his face flushed, and his eyes were somewhat blood-shot. The breathing seemed to be tolerably easy, and there was but little cough; in short, there was scarcely any subjective symptom that indicated the presence of any pneumonic distress. The left side of the *chest* sounded well on percussion and auscultation; but, on the right side, percussion elicited a dull sound over the upper part; and in this region there was a *respiratio tubaria,*

and a dry crepitating noise perceptible. The *abdomen* was considerably inflated but soft; the cœcal region was somewhat tender, and gave out a rumbling noise on pressure. The pulse was rapid, small, and soft; and the skin was hot. Nothing was known as to the state of the urine and of the bowels.

From these facts, it was inferred that two organs were chiefly affected; 1, the upper lobe of the right lung, where there was inflammation in the stage of Hepatisation; and 2, the lower part of the intestinal mucous membrane. It was therefore suspected that the Pneumonia was associated with a typhous condition. The cerebral phenomena were viewed as merely consecutive and incidental; they might be the result of the abuse of spirituous drink, as the patient's breath smelled somewhat of it. Accordingly, some blood was taken by cupping over the right lung, and a venæsection was ordered to be practised in the evening, if the inflammatory symptoms became more decided. The following mixture was also prescribed:—

℞. Infusi Digitalis (gr. x.) ℥ iv.
Mucilag. Salep. ℥ ij.
Natri nitrici ℥ ij.
Syrupi simpl. ℥ j. M.

During the night, the patient was very restless, and could scarcely be kept in bed. Six ounces of blood were therefore taken, early next morning, from the arm. It was now ascertained that the patient had been ill eight or nine days, and had taken some Epsom salts, which had acted pretty strongly upon the bowels: the intestinal affection might therefore be regarded rather as a medicamental result, than an original symptom of the disease. The concentration point, the key of the riddle, doubtless lay in the organs of Respiration; and here we may make the general remark, that the difficulty of Diagnosis consists not so much in the mere discovery of the symptoms of a disease, as in the due appreciation of their relative importance and mutual bearings.

The cephalic symptoms were decidedly relieved by the remedies; and then the *subjective* symptoms of the thoracic disorder immediately became, as usual, much more distinct. This is a common occurrence, and deserves to be attentively considered. Schoenlein mentions briefly another case, in which the patient appeared to be quite free from any affection of the organs of breathing as long as he was in a delirious state; but no sooner did this subside, than the symptoms of an active Pneumonia at once became strongly marked.

It was necessary to repeat the venæsection to a small amount; the same internal remedies were continued. Every thing promised a favourable issue; as the state of all the great cavities of the body seemed now to be much more easy and comfortable. The diarrhœa and irritation of the bowels had so entirely ceased, that an enema was required occasionally. The sound, on percussing the right side of the chest, was still dull; but the crepitation was replaced anteriorly by a mucous rale; a change that indicates a resolution of the inflammatory action. The former of these sounds however, accompanied with bronchial respiration, was still heard in the axillæ, and also behind, over the scapulæ; at these parts, therefore, the pulmonary parenchyma was considered to be still in a state

of hepatisation. The pulse had become much more favourable, and the skin and kidneys had evidently begun to throw off critical evacuations.

When every thing was going on favourably, a very unexpected recrudescence of the pneumonic symptoms took place, in consequence of the patient having left his bed while he was freely perspiring. Blood was immediately taken, both from the arm and also by cupping over the seat of the pain; the use of the *Digitalis* and *Nitre* was resumed, and half a grain of *Calomel* and of the *Sulphur. aurat.* was given morning and evening.

Such relapses must always be regarded on the whole with an unfavourable eye; especially when, as in the present case, there is reason to apprehend the supervention of any Cardiac affection—indicated by a rapid, irregular, and somewhat intermittent pulse, and the presence of a "follicular rushing" sound over the origin of the Aorta, at the left edge of the sternum. A large blister was therefore applied at this part. On the next day, the patient was decidedly better, and the following mixture ordered to be taken, in spoonful doses, very frequently:—

℞. Decocti Salep ℥ vj.
Nitri 3ss.
Ammon. Muriat. 3j.
Solution. liquirit. ℥ ss. M.

The remarks made on the occasion by Dr. Schoenlein, are to this effect:—

"I will here attach no great importance to, or lay much stress upon, the *subjective* phenomena; as, for example, on the circumstance that the patient has slept well, coughed little, and feels himself better. Such symptoms are only valuable when they accord and coincide with an amendment in the state of the *objective* signs. That such is the case in the present instance, is proved by the circumstance that it is now only over the posterior part of the upper lobe of the right lung that there is any trace of moist rattle to be heard, and that the cardiac abnormal sound is no longer perceptible; the pulse having at the same time become less rapid, although it is still somewhat irregular.

"It became a question whether the irregularity of the pulse might not be owing, in part at least, to the action of the Digitalis; but then this action could never have occasioned the objective cardiac phenomena; moreover, the frequency of the pulse was accelerated rather than otherwise; nor were there any of the other symptoms that are apt to be induced by the use of this drug."

The patient eventually recovered.

Upon the important subject of the *Co-existence of Carditis with Pneumonia*, we find the following observations appended in a note:—

"You have seen several cases, where, on the relapse of a pneumonic attack, inflammation of the Heart was found to be co-existent. I believe that such a complication is not of unfrequent occurrence; and I need scarcely add, that it adds very seriously to the danger of the malady. Whether the development of cardiac inflammation under such circumstances is at all facilitated or promoted by the previous administration of Digitalis—a drug which has so lowering an effect on the action of the heart—is a question that deserves some consideration, and which we are not quite prepared to answer one way or the other. It may not be altogether undeserving of notice, that, in Chlorotic girls, whenever inflammatory action is set up, there is a marked tendency to the Pericardium and Endocardium becoming affected. If such be the case, the operation of very potent

anti-phlogistic measures may induce the same predisposition. But, without seeking to find out the cause or reason why such things are so, it may be sufficient for the practitioner to know that a Heart-affection is very frequently associated with a relapse of Pneumonia."

*Value of Auscultation and Percussion.*

The opponents of the new method of investigation allege—and its most zealous advocates do not deny the charge—that it is still very imperfect; but surely such imperfection forms no sufficient reason for its condemnation or rejection. For example, it is quite true that, when inflammation exists in a central portion of any lobe of the Lungs, and when the affected part is surrounded with healthy parenchymatous structure, the auscultatory signs are of comparatively little value. But, even under these circumstances, our diagnosis as to the Seat of the morbid process may be very materially assisted by the very absence of the pathognomonic acoustic phenomena. Thus, if there be present the *sputa cruenta* with the other subjective symptoms of Pneumonia, and yet auscultation fails in detecting any abnormal sounds, we may reasonably conclude that the inflammation must be seated in the central and deep-seated part of the affected lobe or lobes. Let it ever be remembered, that no judicious physician will ever trust exclusively to the auscultatory signs, in this, or in any other disease; the functional symptoms and the state of the bronchial secretion will always be attentively examined. But, because the former may occasionally be apt to mislead, surely this is no sufficient argument for rejecting their assistance altogether.

How important is the use of Auscultation in assisting our diagnosis, where the patient may be delirious, or otherwise incapable of giving any account of his feelings! We are, every now and then, meeting with cases where the *subjective* symptoms of Pneumonia may be almost entirely absent, (the breathing being apparently quite free, and no cough existing, nor any pain* in the chest complained of,) and yet in which there cannot be a doubt, from the nature of the auscultatory signs, that inflammation of the Lungs is present in the lungs. Dr. Stokes very judiciously recommends that the state of the thoracic viscera should never remain unexplored in patients labouring under *delirium tremens* or Typhus fever, whether there be any obvious symptoms of inflammation present or not.

There is another condition in which the use of auscultation may prove of the greatest benefit in directing the medical treatment; and that is when all the active subjective symptoms have subsided, and the patient has turned, as it were, the corner in his advance on the road to health. Let it never be forgotten, that, as long as there is any mucous rale perceptible, we have good reason to believe that the inflammatory process has not entirely ceased, and we should still carefully avoid the exhibition of stimulants and tonics. Much harm is frequently done by having recourse pre-

* The degree of *pain* in Pneumonia depends a good deal upon the part of the lung that is affected, according as it moves little or much up and down, in the acts of breathing. Hence it is, that it is usually more severe when the middle, than when the upper or lower, lobe is inflamed.

maturely to the use of these means after an attack of Pneumonia. A far safer practice, on the whole, is to continue the use of such medicines as *nitre, sal ammoniac, and sulphur. aurat.* until all the dregs of the disease are entirely got rid of.

The *seat* of the *pain* in Pneumonia cannot be trusted to, by itself, as a sure guide as to the *seat* of the *inflammation*. Stoll and other writers record many cases in which dissection proved that the inflammation was on the opposite side from that on which the pain was felt during life. It is only by the use of the Stethoscope that we can attain to any exactitude in our diagnosis as to the *seat* of a Pneumonic attack.

In a former part of this article, we have alluded to the modifying influence of an Agueish principle on the course of Typhus fever. A somewhat similar change is observed to result from the operation of this principle on the symptoms and general character of several thoracic diseases. In one of the cases of Pneumonia recorded in these Reports, the patient had been long subject to Ague. Dr. Schoenlein availed himself of the opportunity, thus presented to him, of pointing out the peculiar idiosyncrasy of constitution which this circumstance is apt to engender:—but first let us notice his remarks on a question that has been much occupying the attention of some French physicians of late, the *Antagonism between Intermittent Fevers and Phthisis.*

"Although it would seem that these diseases exclude each other (at least, in a very great measure) so that the latter is seldom met with in those places where the former prevails, it is unquestionably true that persons—who, after having long suffered from Ague, have left the malarious district, and have gone, seemingly quite cured, into another region—are exceedingly liable to being attacked with catarrhs; and those catarrhs not unfrequently terminate in confirmed, and often galloping consumption, although there be no hereditary or constitutional predisposition to the disease. I first observed this fact in those Swiss, who had returned from the ague-districts of Holland. In cases of this sort, according to my experience, the tuberculous disease is generally most developed in the *left* lung—corresponding therefore with the side on which the Spleen is situated—and most frequently too, in its lower lobe. There was always more or less splenic enlargement present at the same time, in the patients affected in this way. A striking illustration of the antagonism, that exists between intermittent fever and Phthisis, will be found in the medical geography of Gasterland (situated between the lakes of Zurich and Wallenstadt). This district used to be the constant seat of agues, in consequence of the land being frequently overflowed; subsequently it has become quite dry. The agues have left it, but their place is taken by Phthisis, a disease which was formerly almost quite unknown."

In reference to the case of Pneumonia, to which allusion was made above, the following observations are introduced by our author:—

"In such persons, various diseases, with which they may happen to be affected, are usually more or less decidedly modified, so that their course in reference to symptoms and crises is considerably altered from that which we generally observe them to pursue. This is a point which is of the highest importance in the practice of medicine, although it has not met with the attention which it deserves. A somewhat analogous change is observed in respect of Plants; which, it is well known, undergo such considerable modifications from variety of soil, difference of exposure to the sun and so forth, that mere *varieties* are not unfrequently apt to be mistaken for different *species*. In the same manner, the characters of

diseases may be very materially modified, according to the nature of the patient's constitution in which they become developed. How difficult, for example, it is to eradicate a syphilitic taint from a scrofulous habit of body! and who does not know the extreme tendency of gonorrhœa, and other mucous discharges, to become chronic in strumous persons. In Ophthalmia too, how much does the obstinacy and intractableness of the symptoms depend upon the idiosyncrasy, natural or acquired, of the invalid! Now, if this remark be true of the eye, there is every reason to believe that it is equally applicable to every other organ of the body, although in none can the progress of the disease be so well observed as in it. We might allude also to the difference in the nature of morbid formations and secretions observable in different constitutions. The coagulable lymph that is effused during an attack of Pleuritis or Peritonitis, in a scrofulous patient, becomes very often the seat of tuberculous matter deposited in its interstices."

But to return to the complication which suggested these remarks—viz. that of an Agueish tendency with an inflammatory disease,—let us briefly notice some circumstances which may suggest to the mind of the physician the suspicion of such being the case. During the full activity of the phlogistic symptoms, nothing unusual may be observed; it is when these have begun to subside, that the peculiarity is usually discernible. Perhaps everything may be promising that the severity of the inflammatory attack is past, and that the disease is fairly subdued, when the patient becomes hot and feverish (with, or without a previous chill) in the afternoon, complains of headache, and may even be delirious, the pulse being much accelerated all the while. These symptoms continue more or less severely until about midnight, when they subside; the patient then probably falling asleep, and awaking in the morning much better. Now, such a febrile invasion and remission may be repeated day after day, for some time; and unless the physician forms a correct diagnosis as to the real nature of the case, he may unfortunately persevere in the use of those very means which will inevitably render the Intermittent type more and more difficult of removal. The sooner, as a matter of course, that Bark is administered in such cases, the better. There may, indeed, still remain the dregs, so to speak, of the inflammation; and therefore the administration of this remedy may require to be accompanied with the cotemporaneous use of appropriate antiphlogistic and derivative means, as cupping, blisters, and so forth.

P. Frank has some useful remarks on this subject in his *Interpretationibus Clinicus*. This writer remarks that whenever the paroxysm of an Intermittent fever is in the habit of daily coming on some time after noon, we have reason to suspect that it is not a genuine and simple Quotidian that we have to deal with, but that there is some other morbid action coexisting at the same time. In cases of complicated Intermittent, the paroxysm also very frequently takes place without any cold stage; and the occurrence of any distinct crises by the skin or kidneys, under such circumstances, is always more rare and imperfect than in simple Agues. Thus the Urine may remain of a deep colour, without any change taking place, when the febrile paroxysm is not present; and if a critical evacuation does really occur, this will perhaps be the genuine crisis of Inflammation, as hæmorrhage from the nose or some other part of the body.

Before passing on to the subject of Pleuritis, it may be as well to find a place here for the following remarks on two practical points, viz. 1, the em-

ployment of *Tartar Emetic in Pneumonia;* and 2, the treatment of a peculiar *status nervosus*, which is apt to occur in some cases of this disease.

With respect to the effects of the Tartrate of Antimony in thoracic inflammation, M. Schoenlein is by no means inclined to go nearly so far in its praise as some recent writers, who pretend that it may almost supersede the use of blood-letting. That it is indeed a most powerful auxiliary, no experienced physician will deny; but it should rarely be trusted to alone. When a Pneumonia has already lasted for some days, and still continues in spite of active depletion, the exhibition of the tartar emetic cannot be too highly praised; but then only after Venæsection has been duly practised. Again, whenever the biliary organs are much deranged at the same time, great benefit may reasonably be expected from the judicious employment of this potent remedy. The contra-indications to its use are the existence of any symptoms of an inflammatory or irritated condition of the gastro-intestinal membrane (inflammation of the cardiac orifice of the stomach is a not unfrequent accompaniment of Pneumonia,) or any tendency to Diarrhœa. In old people more especially, it requires to be used with caution, as in them it is apt to induce a Marasmus of the digestive organs. M. Schoenlein is not friendly to the exhibition of the very large doses recommended by some writers. His usual formula is a solution of from two to six grains in as many ounces of water; of this mixture, one-half is to be taken at once, and then a table-spoonful of the remainder every half-hour or so.

* * * * * * * *

The *nervous condition*, which not unfrequently comes on in cases of severe Pneumonia, in consequence of some disturbance of the circulation, —and which is indicated by a frequent, small, and oppressed (unterdruckten) pulse, a blueishness of the countenance, coldness of the extremities, delirium, &c.—should always be carefully distinguished from that state wherein the attendant fever is of a torpid or typhoid character from the very beginning, as is the case in genuine *Pneumonia typhosa*. Unfortunately both of these conditions have been at different times described under the general appellation of *nervous*. The physician must be on his guard that he is not deceived by the symptoms in the first of these cases, and thereby be led prematurely to suspend the use of antiphlogistic, and have recourse to that of stimulant, remedies. We should steadily persevere in the employment of the former, although certainly it may be wise to modify them according to individual symptoms.

One of the best remedies under such circumstances is *Digitalis*, in the form of infusion, to be given in frequently-repeated doses: some of the *Aqua lauro-cerasi* may often be added to it with advantage. It lowers the action of the heart, and at the same time serves to stimulate the urinary secretion. Small doses of *Calomel* and *Sulphur. aurat.* night and morning, may also be of great service, at the same time.

III. The class of cases, which next attracts our notice, is that of Pleuritis, and—its not unfrequent consequence—the effusion of a serous or sero-purulent fluid into the cavity of the chest. In the remarks which immediately follow, the attention of the reader is drawn to a peculiar symptom which may perplex his diagnosis in some instances.

*Complication of Spinitis with Pleurisy.*

We occasionally meet with cases of Pleuritis, which are accompanied with severe pain in the back, and stiffness of the vertebral column: these phenomena *may* depend upon an extension of the inflammation to the investing sheath of the spinal-marrow. Allan has described this form of the disease, in his *Synopsis Medicinæ Practicæ*, under the name of *Pleuritis Postica*. A case of this sort occurred in Schoenlein's clinical practice a few years ago. A labouring man was admitted with all the symptoms of Pleuro-pneumonia on the left side: there was reason to believe that the inflammation extended to the diaphragmatic pleura. At the same time, the patient complained of a severe dragging pain in the sacral region, much increased on pressure and motion, along with a feeling of tension around the abdomen, and a sense of formication along the left lower extremity. The patient was freely bled from the arm, and also by means of cupping over the loins, and ultimately recovered. In reference to that case, Dr. Schoenlein made the following remarks at the time:—

"These severe pains in the spine are not unfrequently mistaken and treated as if they were of a Rheumatic origin; and perhaps, before their real nature is discovered, paralysis has already set in. Exposure to cold and wet is the most frequent cause of this dangerous lesion. I had repeatedly occasion to witness cases of this complication at Wurtzburg among the soldiers who kept sentry upon the walls at night, exposed to the cold sharp winds: in some instances, the attack assumed a tetanic character from the commencement. I have also met with cases among persons who were travelling on foot through Switzerland, and who perhaps had remained all night upon the summit of Mount Rigi, in order to witness the rising of the sun in the morning. One of these cases proved fatal.

"We need not say how very important it is to distinguish any case of Spinitis from one of mere Rheumatism. The pain will be found to be seated not in the muscles, but fixed at some part of the spinal column; and it is always much aggravated by pressure and motion. A feeling of constriction in the abdomen, as if a band was drawn tightly around it, is a symptom that is generally present; and likewise that of numbness or perhaps of formication in one or both of the lower extremities. The act of walking is always more or less painful and difficult; and there is very generally some disturbance in the excretion of the urine. If the cervical portion of the spine be the seat of the disease, then there is usually a sense of constriction in the chest; perhaps also a spasmodic cough, or, it may be, nausea and vomiting: in many instances, too, a greater or less degree of paralytic weakness of the upper extremities. As to the treatment of all such cases, we should have recourse to blood-letting (especially local,) the inunction of mercurial ointment over the affected part, and the exhibition of large doses of calomel, to which some jalap should be added: subsequently, the use of warm-baths is of the greatest service."

CASE.—*Pleuritis mistaken for Rheumatism—Effusion into the right Sac of the Pleura—Indications for having recourse to Paracentesis—Stimulation of the Normal Secretions—Narcotism from Digitalis—Recrudescence of the Pleuritis—Recovery.*

A man, 26 years of age, had been seized, three weeks before his admission into the hospital, with shivering followed by heat, and with sharp pain on the right side of the chest, increased by deep inspiration, and by any movement of the arms. The case had been mistaken for one of Pleurodyny—a mistake, by the bye, that is not very unfrequent—and treated

with tartrate of antimony, cupping and blisters; remedies, however useful in themselves, not potent enough for the dangerous disease that was actually present. When admitted, the breathing of the patient was not much distressed, except when he attempted to lie on his left, or sound, side. The right side of the thorax appeared to the eye somewhat fuller and more arched out than the other. The whole of this (the right) side, with the exception of the space between the clavicle and second rib, was dull on percussion, and no distinct respiratory murmur was to be heard over it. There was a slight cough, which (pressure had the same effect) caused pain between the fifth and sixth ribs. The liver was to be felt lower down than usual: in some cases of effusion into the right pleura, this viscus has been known to be thrust down as low as the ilium.

The nature of the present case was obvious: a pleuritic attack had terminated, by a pseudo-crisis, in a serous effusion. As there was still a feverish frequency of the pulse, and the urine was also deep-coloured, it was deemed not unlikely that the inflammatory action had not entirely subsided. Accordingly, a small quantity of blood (which proved to have the buffy coat) was taken from the arm, and the cupping-instruments were applied over the spot where the pain was felt. At the same time, a mixture—composed of infus. Digitalis (℥j.) ʒiv., Mucilag. Salep. ʒj., Nitri 3ij. (the *liquor kali acetici* was subsequently added), and syrup ʒj., was ordered to be taken in frequently-repeated doses; and the right side of the thorax was well rubbed with an ointment, consisting of *ung. hydrarg.* and *ung. pot. hydriod.*, to which some *oleum hyosciami* and *oleum juniperi* were added. As the medicine did not act sufficiently upon the bowels, the *tartarus boraxatus* (ʒss.) was substituted for the nitre.*

It is certainly very surprising how little the breathing is distressed in some cases of extensive pleuritic effusion. Instances have been known where the patient has scarcely suspected that any thing was amiss in his chest, until he happened to observe that his heart was beating on the wrong side, to the right of the sternum. Perhaps the only inconvenience that he had hitherto experienced, might be a slight oppression in his breathing upon going up stairs, or in the evening after a full dinner.

It is sometimes not very easy to determine which is the best emunctory—the bowels or the kidneys—by which the evacuation of the effused fluid should be sought to be promoted. Much must depend upon what seems to be the tendency of Nature in each individual case. Most frequently, certainly, the effort is made by the kidneys; and here it deserves to be noticed, that the character of the urinary secretion is found to vary much in different instances—according, it would seem, to that of the effused fluid. When this is serous, the Urine is usually merely increased in quantity, and but little altered in its qualities; while, in other cases, it is found to contain a quantity of mucus, or even of pus, when the pleural effusion is of a purulent character. In this manner, therefore, we may often be enabled to predict the nature of the fluid effused into the cavity

* Upon a previous occasion, Schoenlein remarks that he has often found the milder aperients, and especially the *Syrupus Rhamni*, answer a great deal better in dropsical cases than many of the drastic purgatives in ordinary use, such as Gamboge, Elaterium, &c.

of the thorax, by attending to the appearances exhibited by the urine. When a purulent fluid is present, there is usually more or less of evening hectic; and it is found that the discharge of such a fluid with the urine generally occurs during the night. The irritation of the urinary passages, from the elimination of pus by the kidneys is sometimes very considerable, and may even induce slight Nephritis. In a few cases of pleural effusion, we have seen a decidedly purulent discharge from the bowels; but this is much less frequent than from the kidneys.

In reference to the use of Digitalis, our author remarks that its effects require to be very attentively watched, especially in old people; for in them it is apt to induce not only an alarming weakness, but a positive wasting and *marasmus*—probably by its acting injuriously upon the nervous system and the organs of digestion. The cautious physician, therefore, will never omit diligently to ascertain the state of these parts, during, and for some time after, the administration of this potent medicine. The preparation, which Dr. S. considers one of the best, is the *acetum digitalis*; the exclusion of which from the late edition of the Prussian Pharmacopœia, he very much regrets.

When all, or nearly all, the pleural effusion in the present case was absorbed, the patient began to complain of pain in the intercostal space between the eighth and ninth ribs on the right side. That the albuminous or fibrinous contents of the effusion—and these are often in the state of coagula or large flocculi—may act in some degree as foreign bodies, when all the fluid portion has been drawn off or absorbed, is not at all improbable; and perhaps such was the case in the present instance. However this may be, it will always be prudent to arrest at once the very earliest symptoms of a serous inflammation; for it is truly remarkable with what quickness (in the case of the Peritoneum still more so than in that of the Pleura) the disease spreads. Accordingly, a small quantity of blood was taken from the seat of the pain by cupping, and the use of the *Digitalis* and *Nitre* was resumed, until all the symptoms of uneasiness were removed. The patient eventually was restored to health.

In the next *case*, the Pleuritic Effusion (the presence of which had been quite overlooked by the medical man who first saw the patient) was on the left side, and to such an extent that the heart was pushed considerably over to the right side, so that it was felt to beat behind and at the right edge of the sternum. The usual subjective and objective symptoms were tolerably well-marked. The diaphragm was considerably pushed down, so that the epigastric region was more prominent than in health, and pressure there occasioned a sense of oppression and distress.

Nearly the same remedies were used in this, as in the preceding, case. As there was reason to believe that there was still some degree of inflammatory congestion in the lower lobe of the left lung, a small quantity of blood was taken by cupping. The following mixture was prescribed:—

℞. Infus. herb. Digitalis (gr. xij.) ℥iv.
Nitri depurati,
Kali acetic. āā ʒij.
Syrupi Mannæ, ℥j. M.

A table-spoonful to be taken every two hours: Selzer water for common drink. The left side was ordered to be rubbed with an ointment composed of mercurial ointment, hydriodate of potash, and digitalis.

Two or three days subsequently, the bronchitic symptoms being aggravated, the patient was bled from the arm to a small extent and with decided relief. An attack, having somewhat of the character of *delirium tremens*, supervened, and necessarily rendered the prognosis rather more unfavourable. It became, therefore, very seriously the question whether we should continue to trust to the action of the remedies in use for the removal of the water, or have recourse at once to paracentesis for its evacuation. The results of Dr. Skoda's experience in this operation have been so very unpromising* (two-thirds of his patients died and generally too in consequence of a fresh accession of the Pleuritic disease,) that there is certainly not much encouragement for its performance. Fortunately, it was deemed wise in our case to defer having recourse to it; for the thoracic symptoms began speedily to subside under the operation of the remedies employed. On the whole Dr. Schoenlein seems to be anything but favourable to the operation of Paracentesis in cases of pleuritic effusion, more especially when there is reason to believe that flocculi of coagulable lymph are present, or floating about in the effused fluid; for, in his opinion, the presence of these flocculi not unfrequently excites inflammation of the pleura, after the serum has been drawn off by puncture. It may, indeed, be objected that the same thing must take place whether the fluid part of the effusion be removed by absorption or by paracentesis; but to this it may be answered that, in consequence of the slow and gradual removal of the fluid in the former case, the contact of the flocculi with the surface of the diseased pleura can never excite so much irritation as when the water has been suddenly drawn off all at once by operation. Moreover, it seems not at all improbable that they may undergo a partial dissolution and absorption, just as we observe to take place with the coagula of blood in the Brain in certain cases of Apoplexy.

The progress of this case was, on the whole, in spite of several unpleasant occurrences, pretty favourable. The quantity of the effusion gradually diminished under the use of the mixture (a drachm of the Muriate of Ammonia had subsequently been added to it,) so that the heart began to resume its natural position on the left side. The patient left the hospital, before he was completely cured: the level of the effusion however had already sunk below the left nipple.

As illustrative of the general question of Pleuritic effusion, and of the propriety of not hastily having recourse to a surgical operation for its withdrawing, the following very interesting Report deserves a place here.

*Phthisis—Rupture of a Vomica—Effusion of Gas and Air into the Pleura —Paracentesis Thoracis—long survival of the patient.*

"The displacement of the heart, *Ectopia Cordis*, from the effusion of fluid into the left sac of the pleura, was very conspicuous in a case of Hydro-pneumothorax—the result of a phthisical cavern in the upper lobe of the left lung becoming suddenly ruptured—which once occurred in Dr. Schoenlein's practice. The heart was found beating at the right side of the sternum; and, according to the patient's statement, this had taken place in the night, immediately after a

* Oester. Med. Jahrbucher. Januar—Juli, 1841.

severe fit of coughing. The place of the rupture was probably closed, for a time at least, by a false membrane. There was but little fever present, and the dyspnœa was so inconsiderable that it was deemed prudent to delay the performance of paracentesis for some time, and to try the effects of remedies in causing the absorption of the effused gaseous and purulent matters. Accordingly, the *infus. Digitalis* was prescribed, and the affected side was diligently rubbed with an ointment, composed of *ung. mercurial*, 3ij., *ung. kali hydrojod.* 3j., and *ung. Digital.* 3j. At first, the use of these means seemed to be attended with benefit; but this was only temporary. A decided fulness, amounting almost to a pointing, became perceptible in the ninth intercostal space on the left side. Here, therefore, an incision was made into the cavity of the pleura; between six and seven quarts of purulent matter flowed out. The immediate effects of the operation were satisfactory; for the dyspnœa and oppression were very much relieved. It seemed however that the rupture in the lung again opened shortly afterwards, as a fresh accumulation of pus took place in the pleural cavity; and the wound was therefore kept open, to permit the free exit of whatever was effused. As might be expected, the patient gradually became worse and worse. He survived, however, for six months after the bursting of the vomica, and for nearly two after the performance of the operation. On dissection, the left lung was found much shrivelled and contracted; on its under surface there was a rupture, so that a free communication was established between one of the bronchi and the cavity of the pleura, which still contained an admixture of gaseous and purulent matters: the right lung was full of tubercles."

Here we must close for the present our analysis of this truly valuable work: we shall probably resume it in our next Number, as there still remains more than a half of its contents unnoticed.

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## THE TRANSACTIONS OF THE PROVINCIAL MEDICAL AND SURGICAL ASSOCIATION. Vol. XIII. 1845. 8vo. pp. 417.

THE present volume of these "Transactions" is not equal, in the interest and importance of its contents, to some of its predecessors, although much superior to them in all that relates to the "getting up." There are five communications.—1. A Retrospective Address, by Dr. Cowan, upon the Progress of Practical Medicine. 2. A Retrospect of Anatomy and Physiology for 1843–4, by Dr. Budd, of Bristol. 3. A Paper upon Inflammation of the Retina, by Dr. Hocken. 4. An Essay upon Inversion of the Uterus, by Mr. Crosse, of Norwich; and 5. A Case of Malformation of the Urinary Organs, by Mr. Giles of Stourbridge.

The two Retrospects are ably written, especially that by Dr. Budd; but treating of by-gone things, most of which have already come under our review, they demand no detailed notice at our hands. There are, however, some of the introductory and incidental observations which we are desirous of placing before our readers.

The following passages exhibit Dr. Cowan's view of the present position of medical science:—

"The science of medicine may be said to be now emerging out of infancy into manhood, to be gathering up the copious generalisations of the past, and submitting them to the ordeal of inductive examination, to be testing hypothetical

assertion in the stern crucible of experiment and observation, and to be giving to language an accuracy and a limitation of which before it was insusceptible. We are, in fact, engaged in reducing an art into a science, and are arrived at the period of maximum difficulty and toil. The elements in our hands are fashioning and shaping for future forms: but, though we can vision the dim outline of a higher and nobler erection, there is yet too much movement and bustle for accurate measurement of what we are accomplishing: things new and old are strangely commingled, and impediments arise from the very number and zeal of the artificers. There never was a period of such sudden excitement, such extensive and simultaneous activity. The unexampled development of the contributory sciences has furnished fresh and unexpected instrumentality for pathological inquiry, and compelled renewed investigation in accordance with the nature of the means now in our possession."

After alluding to the effect which recent chemical and microscopic research, and the revived attention to humoral physiology and pathology have had in indicating the defects of our already acquired information, and in at once extending our sphere of acquirement and the number of our resources, Dr. Cowan continues:—

"Another most striking feature of our present condition is the unexampled facility afforded by the press for the expression and diffusion of thought. Every idea now finds an easy channel for utterance; in our periodicals and other publications encouragement is given for the most fleeting expression of opinion; and investigations, whether trivial or important, are equally honoured by publicity. The necessary consequence has been, that evil has been mingled with the good; our literature has become most inconvenient from its bulk, full of crudities and endless repetitions, heterogeneous and fragmentary in character. The student is wearied and confused by the very extent of the surface, the exercise of thought is impeded by so continued a draught upon his powers of acquisition, and what is original and vigorous in the mind is too often repressed or entombed. The natural tendency upon an ambitious spirit, if not of the highest and most comprehensive order, is to over-stimulate and exhaust its energies in the mere effort to acquire, to consume beyond the power of digestion, and either to rest with slavish dependence upon the dogmas of others, or escaping from what is felt impossible to reconcile, to pursue the path of ignorant self-reliance, reckless of all authority and experience.

"We are kept in a constant state of expectancy and interrogation: doubt pervades every thing, and truths which ages have confirmed are exposed to assailants of every form and dimension, boldly requestioned and challenged by the experimenter of a day. Our periodical literature, and more formal treatises, inconveniently and undesirably multiplied, teem with detail and assertions of the most superficial and contradictory character; yet all, as in olden times, based upon *facts*, and raised to a higher nominal authority, because supposed to be founded upon a purer indicative philosophy."

That the great facilities, and even inducements, which the numberless medical periodicals now offer for whosoever is willing to appear in their columns (whether in the shape of an original article, a case with endless observations, observations without any case, or in the hundred ways in which their voluminous pages are now filled,) are attended with considerable evils, there can be, we suppose no doubt. In this way, the superficial and incompetent are placed in an unduly prominent position, a feverish anxiety for premature publicity is engendered, and even the really competent are deterred from bestowing that thought, care, and re-examination of

their productions, which would be considered but due were they destined to appear in a less fleeting medium. But, on the other hand, we must not forget that, without such facilities, many really valuable communications would have never seen the light, and that they form an excellent means for the wide diffusion of the knowledge of the improvements in the more practical portions of our art. We may observe, *en passant*, that the truth enounced by the Reporter in a subsequent part of his address—"A much smaller number of medical periodicals, if truthfully and energetically conducted, might be most advantageously substituted for their, at present, most inconvenient multiplication"—does not appear with the best grace when addressed to the proprietors of one of the youngest of the family—whose pages, too, have been subsequently opened for the reception of articles in defence of the ultra-pretensions of Mesmerism.

Notwithstanding the, in some respects, chaotic state of our accumulating materials, Dr. Cowan justly observes, that our condition upon the whole is one of progress :—

"While making these remarks, we are not overlooking the far more gratifying and unquestionable consideration, that medicine, both as a science and an art, is really advancing; that the labours of a few master-spirits, particularly during the past half-century, have astonishingly extended our knowledge of the nature and seat of disease; that we are in the possession of a discriminating power in diagnosis and treatment, to which our predecessors were strangers; and that, provided as we are with new instruments of research, and furnished with additional therapeutic resources, we may yet calculate upon much increase beyond what has already been attained. But, still, it is no less true that we have our disadvantages, and there are clouds which bedim the horizon of our future prospects.

"We are too apt to forget that the great work we are now engaged in is rather that of explanation or development, than of discovery; the clearer illustration of what is old more than the revealing of what is new; reducing into accuracy of classification and expression what was before only general and vague, and demonstrating the soundness, not the absurdity, of many of the ideas and conclusions of our predecessors. We must not estimate our present progress by mere numbers, opportunity, or zeal, nor suppose that the multitude will ever be directly instrumental in the extrication of truth. No; this holy and glorious mission will ever be the privilege of the gifted and laborious few, and its accomplishment be impeded rather than advanced by the undue multiplication of labourers. However excellent the system we adopt, however perfect the scheme of our enquiries, the true value of results must ever chiefly depend upon the power and qualifications of the observer. Few, very few, possess these to the requisite extent, and hence we are daily overwhelmed with materials too incomplete and amorphous ever to become the foundation of scientific induction."

There are some useful observations also upon the inefficiency of the *numerical method* as applied to practical medicine. The ever-changing and complex character of the phenomena of disease render resort to it impossible or unsafe.

"Though strongly advocating the utmost possible extension of numerical research, substituting as it does the accurate for what is vague, and regarding its varied and extensive applications at the present moment as among the distinctive peculiarities of our times, we yet feel that in the practice of medicine its uses are limited, and that there are evils as well as benefits resulting from its undue application. Not only is it incapable of preserving us from mistakes as egregious as any which have been fostered under the less definite sanction of experience,

but it imparts to falsehood a fearful semblance to truth, and gives to assertion an absoluteness and precision well calculated to satisfy the inquirer, and repress the effort of independent observation."

Dr. Cowan administers a deserved reproof to those who, dazzled by our apparent progress, perceive not any obstacle to its continuance, and are prone to contrast it with by-gone times. He maintains we have not possessed ourselves "of a single leading principle not recognised by the soundest thinkers of ages which are past," while we have not escaped "a warfare of hypotheses as violent and contradictory as any which has characterized the darkest periods of our history."

We will now make a few extracts from the body of the address.

*Purgatives in Fever.*—"The employment of purgatives in Fever has met with an intelligent investigator in Mr. Hunt. He very rightly considers many of the functional disturbances to have a remedial tendency, and objects to the routine interference with a torpid state of the bowels in the low stages of fever, regarding the condition as favourable to digestive and nutritive repair. He has known seven days to elapse without an alvine evacuation, and with the greatest apparent advantage, and we believe many practitioners have had to regret the exhibition of even the mildest laxative in the later stages of fever, accompanied with much abdominal irritation. Endeavouring, by alterative and laxative medicine, to render the excretions healthy, must necessarily be fruitless, if not injurious, so long as the entire system is specifically disturbed, and yet it is often attempted, as if the individual were otherwise healthy. To proscribe laxatives altogether, would be equally undesirable. There are many degrees between the systems of Hamilton and Broussais, but in England we are perhaps too much impressed with the necessity of regular alvine discharges under all circumstances, and sometimes forgetful of the peculiarities of diseased existence. The right use of purgatives in fever is unquestionably a point of great practical difficulty."

*Follicular Ulceration in Fever.*—"We have never been able to partake of the enthusiasm excited by the discovery of intestinal follicular changes, and have often felt wearied at their minute and endless description, unable to grasp the immense importance of the fact, or to perceive its asserted bearings upon the explanation or pathology of fever. That it is desirable to know every change which disease induces in our organs, no one can reasonably deny, and in proportion as pathology is accurate is our treatment successful; but the tendency to over-estimate them has been strikingly displayed in modern times, and incalculable labour has been devoted to subjects of very secondary importance. Such views may be regarded as heretical by many, but of their ultimate prevalence and truth we feel confident."

*Buffy Blood.*—"Mr. Wharton Jones has pointed out a very ingenious method of determining whether the blood is buffy or not, from the examination of a very minute portion of this fluid. It consists of quickly enclosing a drop between two pieces of glass, and observing with the naked eye the quickness with which it assumes a mottled appearance, and the smallness or largeness of the interspaces. In buffy blood the mottling is almost instantaneous, and the interspaces large, while in healthy blood it is delayed for half-a-minute or more, and the reticulation is minute."

*Nature of Insanity.*—The following are some of the remarks made by Dr. Cowan, when referring to the Rev. J. Barlow's essay, "On Man's Power over Himself to prevent or control Insanity."

"The tendency of recent research has certainly been to exalt the material at the expense of what is spiritual: to make much of the instrument, and but little of the controlling power; to regard, in short, mental aberrations too exclusively as the expression of organic disturbance. Much practical good has undoubtedly resulted from the clearer apprehension of the truth, that all mental and moral manifestations are affected through the medium of a special organization, and therefore dependent for their exercise on the health and integrity of the instrument; but, while fully admitting such a dependence, and giving due credit to those who have laboured most successfully for its establishment, we have felt conscious that the agency of mind upon matter was virtually, though not always nominally, disregarded; and that the actual increase to our knowledge resulting from cranioscopical examination, was really much less than what was confidently assumed. * * * * * * * * *

No man can doubt, if deducing his conclusion from the knowledge of his own heart, that his mental aberrations from what is right, are moral not cerebral delinquencies; and if so, why should we shrink from admitting the possibility of morbid manifestations sometimes originating in a perverted spiritual principle, as well as in diseased organization? Such a supposition is consistent with the statements and facts of revelation; with what we know of the daily and hourly operations of our own mind; and will, we feel confident, be increasingly acknowledged in proportion as we ascend to a sounder and more comprehensive philosophy."

*Epilepsy.*—"Dr. Wakefield Scott has adduced some additional cases confirmative of the value of large doses of *Digitalis*, as advised by Dr. Starkey and others; and M. Semoine states that he has successfully treated three confirmed cases by the following mixture, the value of which can only be inferred from the assertion of its efficiency. ℞. Liq. Amm. Ac. ʒxij. Syr. Aur. ʒj. Aquæ ʒij. Aq. Lauri-ceras. ʒj. S. coch. amp. iij. in die. Nothing can be more vague and unsatisfactory than the generality of reported cures of epilepsy. Very careful discrimination, and very numerous and long-continued experiments would be necessary to arrive at any trust-worthy results. The clearer appreciation of reflected sources of cerebral irritation appears to be the principal advance which modern investigation has made in the diagnosis and management of this most distressing complaint."

*Naphtha in Phthisis.*—"After the statements of Dr. John Hastings, the long-sought remedy might have been considered as at last discovered. But, alas! naphtha, like its shadowy predecessors, seems destined to equal, if not to a more speedy, oblivion. Two or three faint testimonies in its favour have been recorded during the past year, but the evidence of its entire unworthiness to merit the praises so injudiciously bestowed, is too general and decided to admit of reasonable doubt. Naphtha may, and probably has its uses, but as a *cure* for consumption, it is utterly to be discarded. We have ourselves rather extensively tried it, and have never derived a single advantage from its use."

*Ovariotomy.*—Although we have stated our arrival at a different conclusion in former numbers of this Journal, we are glad to be put into possession of the opinion of so able and dispassionate an observer as Dr. Cowan upon this much-controverted operation.

"From the admirably detailed cases of Dr. Clay, Dr. Walne, Dr. F. Bird, and Mr. Southam, besides other instances reported from the Continent and America, not to mention the statements made by earlier observers (for the operation dates back at least 70 years,) we believe the value and rationality of extraction, under favourable circumstances, to be satisfactorily demonstrated; and

in the statistics of the operation, so diligently collected by Mr. Phillips, Dr. Churchill, and a writer in the British and Foreign Medical Review, we can discover nothing that would justify a more unfavourable conclusion, because materials of a most dissimilar and heterogeneous character form the elements of their calculations, and are utterly incapable of eliciting truth. The numerical system so applied becomes a positive abuse, and gives a sanction to results which have nothing to recommend them but the garb of arithmetical expression. If the attendant risk, when properly performed, be not greater than that of major operations generally, and if the inefficiency of internal treatment be ascertained, we regard all discussions on diagnosis, and methods of performance, as of very secondary interest, because every case must, after all, be individually considered, and the same general principles must be acted upon as would influence our decision under other, but analogous, circumstances."

The misfortune is, that, in the greater number of instances, the extirpation has been undertaken in complete violation of the "same general principles" which are our guide in determining upon the performance of other capital operations; and the consequence is, that in the history of no other operation will life have been found so frequently jeopardized and lost for the removal of a disease not necessarily, or at all events speedily, mortal; or the surgeon so frequently discomfited by discovering, when in the middle of his painful and formidable undertaking, that the disease for which it has been put into force exists not, or is of such a nature as to render the completion impossible.

*Quackery.*—Dr. Cowan has long fought a good fight against empiricism in its various forms, and we regret to find he almost thinks the cause is a desperate one.

"We much regret that, in the measures contemplated by Government, there is no indication of any intention actively to legislate against the unqualified practitioner, or to suppress or regulate the sale of empirical nostrums. We confess ourselves weary with the effort to rouse a feeling of bold resistance to quackery in every form, and to popularize the conviction that it ought to be restrained by the strong arm of the law. On what principle law is to prove inoperative for such a purpose we have never been able to comprehend; and to expect the remedy in a diffusion of knowledge, or in the good sense of those who never can and never will appreciate the true merits of the question, we can only regard as a vain and hopeless chimera."

Dr. Cowan suggests, among other means of discountenancing quackery, "that the press should not be a sanctioned vehicle for announcements which are palpably false and necessarily injurious; that men who are manifestly disregarding the first principles of truth, and making merchandise of public ignorance and credulity, should not be assisted in the diffusion of falsehood by agents intended only to benefit and enlighten." The advertisements of quacks and quack medicines form by far too profitable a source of emolument ever to be relinquished by the proprietors of newspapers, especially the lower class of these. Their forcible suppression is obviously impossible, and the imposition of heavy duties upon this class of announcements would be liable to the very "Government participation" which is objected to, by the author and others, in regard to the medicine stamp-duty. In France, where the laws governing the press are sufficiently arbitrary, those against quackery much more stringent, and the anxiety of

the State much more unequivocal than with us, the advertising columns of the newspapers teem with announcements as delusive and preposterous as do our own. The noble stand recently made by the "Nation" newspaper in Ireland, seems to have been but coldly responded to by the profession.

Dr. Budd's *Retrospect of Anatomy and Physiology for the year* 1843-4, consists of an able critical, and in some respects analytical, review of the numerous publications upon animal chemistry and structural anatomy which have appeared during that period. Its condensed form forbids other extract than one or two collateral passages.

Of the pursuit of Physiology, independently of its connection with medicine, Dr. Budd thus expresses himself:—

"The condition of physiology as a branch of knowledge—as an able writer has lately remarked of politics—was, up to a late period, that which Bacon animadverted upon as the natural state of the sciences, while their cultivation is abandoned to practitioners; not being carried on as a branch of speculative inquiry, but only with a view to the exigencies of daily practice, and the *experimenta fructifera*, therefore, being aimed at almost to the exclusion of the *lucifera*. To this circumstance, quite as much as to the inherent and peculiar difficulties attending all investigation into the phenomena of life, must be ascribed the slow progress of physiology, while it was cultivated, more or less, with a view to its subservience to the practice of medicine.

"There is still too general a disposition among medical practitioners to rate discoveries in this science in accordance with their immediate and obvious applications to the healing art. But surely the adoption of such a low standard of value implies great short-sightedness, and still greater ignorance of the history of science; as if the more general and abstract the truth, the greater were not, of necessity, the number of practical consequences it involves, and the greater, ultimately, the practical gain. Were it needful, a thousand instances might be brought from the annals of invention to illustrate this truth."

After observing that the adoption of this spirit of abstract inquiry in the various branches of human knowledge marks the transition from an art to a science, and has always been the herald, or rather the cause, of brilliant discoveries, Dr. Budd adds:—

"In the study of the phenomena of life, the change was slow to make. Happily, however, for the advancement even of practical medicine itself, physiology is now extensively cultivated as a pure science. Numberless works of great merit are written upon it; chairs are instituted for the teaching of it; endowments are made in support of its votaries; and, in all civilised countries, numbers of eminent men dedicate their lives to its advancement. Thus, in this branch of human knowledge, also, the division between the practical and the speculative, the *experimenta fructifera* and *lucifera*, is final and complete."

*Cruel Experiments on Animals.*—We cordially join with Dr. Budd in reprobating the utter recklessness with which so many of the French physiologists inflict the cruelest sufferings upon helpless animals, without the attainment, or probability of attainment, of objects of commensurate importance, or which might have been attained by less objectionable procedures. The accounts of some of these, which it has been our lot to peruse, are sickening in the extreme, from the wantonness with which they have been undertaken, and the unnecessary suffering their mode of performance

gives rise to. That experiments are quite justifiable when a sufficient case for their institution is made out, we are persuaded; but, that a deep responsibility rests with individuals who undertake their performance, can any one doubt? Inquirers in our own country are by no means free from the stain of having unnecessarily multiplied these severe and generally imperfect expedients; but certainly, here at least, they must yield the palm to their continental brethren. It would be bad enough were only insufficient yet accurate results derivable from these procedures; but when we find that these, as observed by different experimenters, are often of the most discordant and opposite character, only agreeing, in fact, in the amount of animal suffering they have given rise to, every heart, not already steeled by frequent perpetrations of this kind, must revolt against their continuance, except under well-defined and exceptional circumstances.

The experiments which have given rise to Dr. Budd's animadversions are those of *M. Chossat*, detailed in his work, *Recherches Experimentales sur l'Inanition*, which obtained a Monthyon prize. His plan consisted in starving a number of animals to death, and accurately recording the various phenomena as they arose.

"To us, however, it appears at first sight as nothing less than wanton cruelty of the worst kind, to starve animals to death merely to have an opportunity of observing the phenomena of inanition, when these phenomena are, unfortunately, daily exhibited to us on a large scale, in the effects of a variety of wasting diseases, and though more rarely, yet in all the simplicity of experiment, by the accidents of famine, shipwreck, and other forms of human calamity."

This, the *prima facie* view of the matter, is confirmed by the examination of the results at which this experimenter arrived—results which were already acquired by, or might have been deduced from, other more accurate and unexceptionable sources of information.

"After these remarks I need scarcely add, that I am at a loss to know on what scientific ground the French Academy thought fit to confer so high and valuable a mark of distinction on this memoir. For thus giving, with so little to justify them, such an effectual encouragement to cruelty of the worst kind, they deserve the grave rebuke of all humane men. I am not one of those who entertain what may be held to be maudlin and sentimental objections to experiments on living animals; but, while freely admitting that such experiments are justifiable, where we are warranted by previous and well-founded induction in the expectation of results of importance to the well-being of man, attainable by no other means, I the more feel bound, on the part of all true lovers of science, to enter an indignant protest against such wretched cruelties as these, undertaken almost at random for the chance of what may turn up, and for the production of phenomena which accident and disease are daily offering to our observation on a large scale, and into the nature of which science has already given us the clearest insight. I want words to express my own abhorrence of these practices, and my deep sense of the guilt of those who resort to them. The frequency of them in France, and the shocking levity with which they are undertaken, is the great blot on the present character of physiological science in that country."

After reviewing the progress of organic chemistry on the Continent, Dr. Budd gives expression to the following natural regret:—

"I cannot close this part of my Report without expressing my regret and humiliation at having, through its whole course, scarcely once had occasion to speak the name of an Englishman. It is true that in this province we have one

or two individual names, of which we may well be proud; but we shall look in vain for anything worthy to be called a *school* of organic chemistry in this country, and still more, for any thing worthy to emulate the noble schools of which Dumas and Liebig are the heads in France and Germany. I earnestly hope that we shall not long allow ourselves to be thus outstripped in this noble rivalry of nations, but that our own countrymen will strive to share in the glories that are yet in store for men of genius, in the bright career which these illustrious chemists have opened to us."

Dr. Budd truly adds, that the non-extension of assistance to this and other sciences by the State, is much to be deplored. The Government of a country like ours, whose agricultural, manufacturing, and commercial prosperity is so nearly linked with the advancement of science, extends no helping hand to its votaries, contented with reaping second-hand the benefits of the more liberal policy of other nations! We have great hopes that some good will result from the establishment of the new College of Chemistry;—the principle of Association coming into vicarious operation in lieu of the function which, in a well-regulated society, should be performed by the State.

## DR. HOCKEN ON INFLAMMATORY AFFECTIONS OF THE RETINA.

Dr. Hocken is certainly one of those who have most fully availed themselves of the facilities which medical journalism affords for rushing into print, commented upon by Dr. Cowan. His fertile pen having furnished weeklies, monthlies, bi-monthlies, and quarterlies, with their full share of articles, is now, it seems, enlisted in the service of the annuals; and the present paper, like all his writings, bearing the impress of a talented and observing mind, would have, like most of them, benefited by compression, or perhaps withholding for a season. In fact, we wish our young practitioners would write less, and their seniors more; for, while the former are too apt, on the strength of their first few cases, to assume the *ton de professeur*, laying down the law rather too peremptorily for their standing; the latter, far too frequently, refrain from imparting to, or leaving for, their brethren, the accumulated and invaluable results of years of observation and experience. However, it is time to proceed with our notice of Dr. Hocken's Essay.

Retinitis, or inflammation of the eye, commencing in the Retina, is a rare disease, the membrane probably however frequently becoming affected in the course of the other inflammatory affections of the organ. Dr. Hocken had the opportunity of observing the disease in 20 patients of the 3926 admitted into the West of England Eye Infirmary, in the years 1837—41. Of these it occurred six times in the acute and nine times in the chronic form—the form not being specified in the five other cases. Both eyes are seldom affected, at least in the acute form; and it is rare for the inflammation to continue long confined to the retina.

*Acute Retinitis.*—Intense pain and great tenderness of the globe, photophobia, zonular redness of the sclerotica, stopping short of the cornea, impairment of vision, and a greater or less degree of sympathetic fever, denote the *active* form of the disease. Sensations of vivid flashes of fire

before the eyes are also observed. The pupil, at first much contracted, afterwards, when the retina exchanges intolerance of, for insensibility to, light, becomes much dilated, presenting a more or less green opacity, according to the nature of the changes operated upon the deep-seated structures. The inflammation may extend to the other textures of the eye, and produce its various consequences. The progress of this form of the disease is very rapid, the eye being soon lost, unless appropriate treatment is resorted to before the disorganizing process is completed. Such cases are however very rare, and the author agrees with Dr. Jacob, that the disease is often mild and insidious, defective vision, rather than symptoms of inflammation, denoting its presence.

"*Passive Form of Acute Retinitis.*—When retinitis occurs in elderly persons, or where the nervous system has been much depressed by mental anxiety and protracted distress; also, where the whole constitution has been much deranged by previous disease: and, lastly, where the original make of the body is feeble; the local phenomena are apt to display much and disorganizing action, without power, and other constitutional symptoms are of a low type. These are very unfavourable cases, having in themselves a greater tendency to an unfavourable termination, and being less under the influence of medicine. In these cases we meet usually with much anxiety and irritability of mind, much languor and depression; the pulse is soft and feeble, sometimes jerking, but readily compressible; the skin dry, but without much heat; and the countenance indicative of depression and anxiety rather than of excitement and fever. The difference between Mr. Tyrrel's experience and my own is, that whilst I should say, from the case I have seen, that the passive forms of retinitis were the exceptions only, Mr. Tyrrel considers them the ordinary, and more active types, the exceptions to a general rule."

Women seem much more liable to retinitis than men, and most of the subjects of it have become predisposed to disease from their occupations or mode of life. The exciting cause may be sudden exposure to vivid light, long exposure to less intense light, the minute examination of illuminated objects, contusions or wounds of the eye; and "indeed, Dr. Jacob supposes the causes of this affection to be as numerous as those of general inflammation of the eyeball: and, if we allow that retinitis complicates most of the inflammatory affections of the globe, this is doubtless true." In respect to the *diagnosis*, the author observes, he has never seen cases in which the severity of the symptoms could have been mistaken for phrenitis, as mentioned by Mackenzie; but amaurosis proceeding from congestion of the brain might be mistaken for retinitis. In it, however, both eyes are affected, there is not intense pain of the globe or intolerance of light. The vascularity of the eyes is not limited and zonular, while the flashes of light, when they occur, are much less intense. The *prognosis* is very unfavourable, unless the disease be seen in good time, and, even when the symptoms are relieved, relapse is very common.

*Treatment.*—In sthenic forms and plethoric individuals free *bleeding* is required, but must not be indiscriminately resorted to, being inadequate alone to prevent disorganization. "Dr. Jacob says truly, when he observes that daily experience proves how unavailing mere depletion is found in iritis, or general internal inflammation, and even how unsuited to par-

ticular cases, however intense the symptoms." In the great majority of cases, local bleeding will suffice, and even this, in the depressed and feeble patient, must be but cautiously resorted to. *Mercury* must be thrown into the system as rapidly, after the relief of vascular tension, as possible, not, however, carrying it to salivation. In slow and protracted cases, *turpentine* may sometimes be advantageously substituted. "In persons far advanced in life, in scrofulous subjects, especially where there is much predisposition to phthisis, and in debilitated persons, this oil is certainly a less hazardous medicine than mercury." The author recommends the formula employed by Mr. Carmichael in iritis. ℞. Ol. Tereb. purif. ʒ j. ad ʒ iss.; Vitell Ovi; tere et adde Emuls. Amygd. (made with a double portion of confection) ʒ iv.; Syr. Aur. ʒ ij.; Spt. Lav. Co. ʒ iv.; Ol. Cinn. gt. iv. M. S. coch. ij. ter. Linseed tea or camphor julep to be drank to obviate strangury. Counter-irritation of some kind may be employed behind the ears or at the nape, after the febrile action has become somewhat subdued.

*Chronic Retinitis*—This may be active or passive in its symptoms, occupying one or both eyes. The sclerotic zone is usually found to be slight, the pupil irregular and discolored, and vision much impaired. The patient is much distressed by sensations of sparks and flashes of various colours, &c. Dull aching pain of the globe, especially at night, is also complained of; it is tender to the touch, being generally firm and swollen, but at other times soft and flaccid. The contraction of the pupil is very remarkable at first, but it becomes dilated and motionless when sensibility of the retina is lost. The progress of the disease is slow, but its ultimate effect is the destruction of vision, having also a tendency to spread to the opposite eye. There is more or less derangement of the system at large, especially of the digestive organs; and in the passive cases there is debility, quick pulse, and hectoid fever. The exciting causes, in most cases, have been the overstrained employment of the eye upon brilliantly illuminated and minute objects. It sometimes follows the acute disease, or may be dependent upon chronic derangement of the health, and the author relates a case in proof of its being sometimes a rheumatic affection. Local bleeding is generally, but not always, advisable, and afterwards mercury or turpentine may be employed according to the activity of the disease and powers of the patient. The mercury, however, must be given so as to produce only the mildest constitutional effects, and therefore much more gradually than in the acute form. The subsequent maintenance of counter-irritation is of importance.

"There is a still more chronic form of retinitis, which I will but briefly sketch. Patients occasionally present themselves, in whom we trace the symptoms of a very chronic form of retinal inflammation; more, in fact, those of retinal hyperæmia than inflammation, being very slow in their progress, and ultimately inducing changes different from the usual effects of chronic retinitis. This form of disease is scarcely, if ever, spoken of as retinitis, but placed under the indefinite term of 'amaurosis,' which, like many other terms, serves as a convenient cloak for ignorance or sloth. It is not by any means a very common disease *per se*, but comparatively so, in common with active or passive cerebral congestion. In this variety of retinitis the eye has a dull, congested, appearance, the conjunc-

tival and sclerotic vessels are enlarged, vision fails gradually, attended with luminous appearances before the eyes, muscæ volitantes, a distorted, broken image in the perception of objects, &c, whilst a gradual change of colour is effected in the pupil, which becomes misty, and presents a turbid, somewhat greenish hue. Here there is no stage of intolerance of light, but from the beginning diminished sensibility of the retina, and desire for bright light. In proportion as the blindness increases so the pupil dilates, and moves with a sluggish and very imperfect motion. In general hyperæmia of the visual textures, both eyes are simultaneously affected; in this chronic form of retinitis, usually but one; but, after the continuance of the disease for some time, its fellow frequently suffers from a similar disease of the same character and parts. All the usually described symptoms of amaurosis may be present in this disease, or any or most of them may be absent. Although very chronic and intractable, frequently terminating in incurable disorganization, yet, when actively and timely treated by an antiphlogistic and mercurial plan, many are brought back to the precincts of health. Mercury, unless very early and steadily used, is less effective than in the more acute cases, since, the very actions which disorganize, render these conditions permanent during the continuance of the disease itself."

## AN ESSAY, LITERARY AND PRACTICAL, ON INVERSIO UTERI. By *John Green Crosse.*

Here we have a production from the pen of one of the seniors of the profession, and we shall be probably thought captious in stating it as scarcely such a one as we could have expected or desired from such a source. Practical observations upon this, or upon any subject, from so able a practitioner as Mr. Crosse, will always command due attention; but we are inclined to believe the "laborious research for several months past" in accumulating materials for the literary portion of the Essay might have been spared; for, notwithstanding a most unwieldy display of lengthy footnotes, we do not find any very novel view of a subject already well understood displayed, or authorities with which the profession was not already well acquainted with cited. It is true we have here only the commencement of the Essay, the present sixty pages or so, being occupied in the description of the varieties of the disease and their symptoms.

Treating first of inversion occurring after parturition, Mr. Crosse divides it into its various degrees, depression, introversion, perversion, and total inversion. Simple *depression* of a portion of the fundus may give rise to serious or even fatal hæmorrhage, but is not of long persistence, passing if not relieved, into the next stage, *introversion*, in which the fundus and a portion of the body of the organ is "received into the remainder of the body and cervix, the convexity of the fundus being palpable at the os tincæ." When more or less of the inverted portion passes through the os tincæ, *perversion* is said to exist; and the whole fundus and body may do this, leaving only the cervix in situ.

"But if the labia resist sufficiently the descent of the fundus, and part of the body remains still uninverted, may not the process be carried to its completion by ascent of the cervix? No author has hinted at this view of the subject, and yet its correctness must be admitted in order to explain the well established fact, that, where the inverted fundus and body are still in the vagina, the cervix is felt high above the pubes, even near to the navel, sometimes taking the situation the fundus would normally occupy, the vagina being proportionally stretched

and carried upwards;—changes which can only be explained by supposing that, at a certain stage, the inversion ceased to progress by descent of the fundus, and was continued and completed by ascent of the cervix."

The uterus may take more or less time in the passage through these various stages of partial inversion. It may accomplish it instantly under the influence of expulsive efforts or traction at the umbilicus. On the other hand, days or weeks may be occupied in the conversion of a depression or introversion into a perversion; and the cases recorded of inversion occurring several days after labour are probably to be explained by a slight degree of it having been at first overlooked. In *total inversion* the cervix as well as the other parts of the uterus is inverted, and although the possibility of this was denied by Baudelocque and others, a host of modern writers have testified to its occurrence, and among others the author himself, in a case narrated by him in the Provincial Journal of last year. Prolapse has been frequently confounded with the various degrees of inversion. It may be added to partial, and is still more commonly so to total, inversion; but this may not take place until days, or even weeks after delivery. It always much aggravates the suffering and danger of the patient.

There is no evidence of inversion ever having taken place from the cervix or body towards the fundus, at least in the human subject; but

"Several of the domesticated quadrupeds are liable to uterine inversion, with prolapse; and I have reason to believe that the progress of the malady in them is often, if not uniformly, from the vaginal termination of the uterus towards the fundus, the reverse of what happens with woman. Many authors who have attempted to describe the progress of inversion, have compared it to 'turning of the finger of a glove inside out' on removing it from the hand; the one is just the reverse of the other, in the human frame, as to the successive changes, although the effect may be the same when, in both instances, the inversion is rendered complete. The comparison would be correct only on the condition that uterine inversion progressed from the cervix to the fundus."

The lining membrane of the inverted uterus, unless inflamed or otherwise morbidly affected, possesses little sensibility; and in the case, occurring to the author, where total inversion had existed for several days, he was enabled to scratch, prick, and apply ice to the membrane without exciting sensation. If the patient survive the first shock and the uterus be not reduced, the hæmorrhage and constitutional symptoms may, as well as the fetid discharge, subside, the organ also gradually diminishing in size, until it does not exceed that of the unimpregnated uterus. It may now be considered a case of *chronic inversion*, perversion being the form usually found to be present. The tumour is of a pale-red or florid colour, covered with mucus, and easily bleeding. It is dense and firm, but larger and softer during menstruation.

"In all instances where the cervix only remains uninverted, the tumour is smaller at its highest part next the cervix, and increases in size as you approach its centre; whatever some writers have stated to the contrary, I find no exception to the correctness of the remark, that the circumference of the tumour is greatest midway between its two extremities, and that a gradual diminution is observable as you trace the tumour upwards towards the encircling cervix."

This observation, however, only applies as long as the organ continues

in a quiescent state, the symptoms induced being mild and not inconsistent with the continuance of active life. When, from hæmorrhages, or other causes, the health becomes injured, or the uterus becomes inflamed or ulcerated, or suffers constriction from the cervix, its appearance and shape become proportionally altered; or, indeed, the organ may never have diminished to its natural size, by reason of the influence of some of these causes. In the majority of instances prolapse takes place sooner or later.

The presence of *polypus*, is, after pregnancy, the most frequent cause of inversion, and Velpeau has related a case in which a polypus the size of a finger attached to the fundus produced this effect. The author also relates a case of fungoid disease, by which inversion was caused. So, too, the removal of polypi or other large uterine tumours may be attended with inversion. A case is briefly detailed which occurred to Mr. Johnson, one of the author's colleagues at the Norfolk Hospital. An enormous tumour, weighing 32 ozs. was removed by ennucleating a portion from day to day.

"When the last part of the tumor passed the external labia, the operator, who alone could be cognizant of this circumstance, felt the inverted portion of the uterus in the vagina, and judged its thickness to be not more than ¼ inch. It was pushed up, so as to be in some degree replaced in the pelvis, and above the os; and although so thin when expanded, the uterine wall must have contracted, for Mr. Johnson assures me that, on examination after the patient's perfect recovery, there was not the slightest projection or irregularity observable, the uterus occupying the same space, and presenting the same shape as in health."

A case of inversion of the uterus, produced by the expulsion of hydatids, and the subsequent successful removal of the organ by ligature, related by Dr. Thatcher, of Edinburgh, in his lectures, is quoted. But a small portion of the author's task is finished with this paper, and for its completion he says, "until each succeeding section is actually written and in type, I shall assiduously employ myself in collecting further information, and thankfully receive it, through any of the numerous channels which have been so promptly and so liberally opened to me, not only in the United Kingdom, but in various parts of Europe, and in far more distant countries."

The portion that is now before us is ably written, and several well-executed lithographs represent various of the preparations referred to; but Mr. Crosse seems to us to have treated the subject as if he believed the nature of the affection to be far less familiarly known to the profession than is really the case.

For a description of Mr. Giles's case of Congenital Malformation of the Male Urinary Organs we must refer to the volume itself.

I. THE CYCLOPÆDIA OF ANATOMY AND PHYSIOLOGY, Parts 25 and 26. 1844. Articles:—Nerve, Dr. *Todd;* Nervous System, (Comparative Anatomy,) by *J. Anderson,* Esq. Nervous Centres, Dr. *Todd.*

II. THE PHYSIOLOGICAL ANATOMY AND PHYSIOLOGY OF MAN. By *R. B. Todd,* M.D., F.R.S., and *William Bowman,* F.R.S. Part II. 1845.

III. TRAITÉ COMPLET DE L'ANATOMIE, DE LA PHYSIOLOGIE, ET DE LA PATHOLOGIE DU SYSTEME NERVEUX CÉRÉBRO-SPINAL. Par *M. Foville.* 1re Partie. Anatomie. Paris, 1844.

IV. ON THE NERVOUS AND CIRCULATING SYSTEMS IN MYRIAPODA AND MACROUROUS ARACHNIDA. By *G. Newport,* F.R.S. Philosophical Transactions, 1843.

V. PHYSIOLOGISCHE UNTERSUCHUNGEN ÜBER DIE BEWEGUNGEN DES GEHIRNS UND RÜCKENMARKS, INSBESONDERE DEN EINFLUSS DES CEREBROSPINALFLÜSSIGKEIT AUF DIE SELBEN. Von *A. Ecker.* Stuttgart, 1843.

VI. UEBER DEN VERLAUF DER NERVENFASERN IM RÜCKENMARKE DES FROSCHES, von Dr. *Julius Budge.* ERFAHRUNGEN ÜBER DIE FUNCTIONELLE SELBSTANDIGKEIT DES SYMPATHISCHEN NERVENSYSTEMS, von *F. Bidder.* VORLAUFIGE MITTHEILUNG ÜBER DIE STRUCTUR DER GANGLIEN UND DEN URSPRUNG DER NERVEN BEI WIRBELLOSEN THIEREN. Von Dr. *Friedrich Will.* Muller's Archiv. 1844.

VII. LEHRBUCH DER PHYSIOLOGIE DES MENSCHEN. Band II. Von Dr. *G. Valentin.* 1844.

VIII. RECHERCHES EXPÉRIMENTALES SUR LES FONCTIONS DU NERF SPINAL. Par *C. Bernard.* Archives Gén. de Medicine. 1844.

IN resuming our notice of the Nervous System, we shall, in the first place, allude to the membranes which invest the cerebral and spinal centres. To the medical practitioner the most interesting of the meninges is the arachnoid; and of this membrane, its relation to the pia mater and the cerebro-spinal liquid is the most worthy of notice. This fluid, first noticed by Cotunnius, has in late years been admirably investigated by Magendie, from whose work extended extracts, accompanied by most characteristic wood-cuts, are given by Dr. Todd in the Cyclopædia of Anatomy. It is important to know that the seat of the secretion is not within the sac of the arachnoid, but in the very lax tissue uniting that tunic to the pia mater, hence called *sub-arachnoid.* It is apparently derived from the vessels of the pia mater, and is so very abundant, that even in health as much as five ounces was drawn off by Cotunnius, by means of a puncture made in the lumbar region. This estimate is greater than that of Magendie, who re-

gards the minimum quantity in the adult as two ounces, though in old age the proportion is so much increased, that, in the aged poor, he has found eight, ten, and even twelve ounces.

The exact relations of the sub-arachnoid space are of considerable interest, both in a physiological and pathological point of view. And first of all it may be well to point out that this space is uninterruptedly continuous from the upper surface of the cerebrum along the whole extent of the cord to the extremity of the sacrum, or, in other words, that the cranium and the vertebral canal form in life, as it is familiarly known they do in the skeleton,—one continuous cavity. The most difficult question to be resolved is, whether there be an opening at the calamus scriptorius, leading from the interior of the 4th, and thus indirectly from the lateral, ventricles, into the sub-arachnoidean space. Such a communication, by which the cerebro-spinal fluid continually passes, either to enter the ventricles or to issue from them, is admitted by Magendie, under the denomination of "*orifice des cavités encephaliques;*" a similar view is taken by Ecker, whilst Dr. Todd conceives that this orifice does not exist naturally, but that the 4th ventricle is closed in the same way as the inferior horn of the lateral ventricles, the aperture described by Magendie being the result of rupture, either caused by the violence to which the brain is subject in its removal, or in the subsequent manipulation. We incline ourselves to this last view, and among other reasons, for this, that no such instance of the perforation of a membrane is known in any other part of the body.

The general use of this secretion is defensive; indeed, it is impossible to conceive of any mechanism more perfect than that of the sub-arachnoid liquid and its associated structures. The brain, and more especially the cord, are, like the fœtus in utero, suspended in a fluid, which, receiving the various concussions to which the cranium and the spine are subject, diffuses the shock throughout its whole extent, and, by thus dividing, weakens, or entirely obviates, the injurious effects. But, besides these external sources of disturbance, the delicate nervous centres are momentarily exposed to variations in the movements of the surrounding vascular currents, dependent upon the alternating actions of the heart and respiratory muscles. Thus, it is well known that, when the brain is observed in the infant through the fontanelle, or in the adult through the aperture made by the trephine, two distinct motions are seen, each of which, when carefully examined, is double: one class corresponds to the actions of the heart, the brain being raised at the time of the systole and depressed at the instant of the diastole; the second class accompanies the respiratory motions, the cerebrum rising with expiration and sinking with inspiration. In these phenomena, and particularly in those of the respiratory order, according to Dr. Ecker, who has made many experiments upon various animals to elucidate the subject, the cerebro-spinal liquid performs an important part. He found, upon laying bare the occipito-atloidean ligament, and making pressure upon it, so as to force the fluid from the vertebral to the cranial cavity, that the brain rose upwards; whilst, upon removing the larger portion of the fluid, by puncturing the ligament, the brain sank. After this latter operation, the respiratory motions, even when forcibly excited, produced little or no corresponding movements of the brain; but when the wound was closed, and time allowed for the reproduction of the sub-arachnoid fluid, the ele-

vation and sinking of the brain again returned. The explanation of Dr. Ecker is, that, during expiration, the blood, driven into the arteries in the centrifugal direction, and prevented returning in its centripetal course, accumulates in the sinuses as well as in the capillaries of the nervous centres; that it thus displaces the cerebro-spinal fluid towards the base of the brain; and that this, to escape the pressure, enters into the fourth ventricle by the foramen of Magendie, streams into the lateral ventricles by the aquaduct of Sylvius, and so raises up the cerebral hemispheres. The elevation of the brain, which corresponds to the systole of the left ventricle, is attributed to the cause assigned by physiologists in general, namely, to the reception of a larger quantity of blood by the carotid and vertebral arteries and their branches. Some interesting peculiarities were observed in connexion with the spinal cord: thus, the motions dependent on the heart's actions were much weaker than in the case of the brain, and those resulting from the respiratory movements were not only more simple in character, but persisted after the cerebro-spinal fluid was drawn off. This latter circumstance is attributed to the powerful distension in expiration of the rich venous plexuses and sinuses of the vertebral canal.

Our readers will perceive that these valuable researches of Ecker have an immediate bearing upon the views of Dr. Abercrombie, respecting the circulation within the cranium. They corroborate the conclusions arrived at by Dr. G. Burrows upon other grounds, that the quantity of blood does vary, and that in a most important manner, in the cranial cavity. It is our opinion, however, that Ecker is in error when he assumes that the cerebro-spinal fluid recedes into the ventricles during the expiratory action; we rather believe that at this period a portion of the fluid corresponding in quantity exactly to the additional amount of blood accumulated within the skull, passes into the vertebral canal, where the pressure, partly taken off by the yielding of the numerous tubular sheaths around the nerves, which we regard as the safety-valve of the whole cerebro-spinal apparatus, and partly broken in its effects by the extent of the canal, causes no injurious results.

We cannot better conclude our notice of this important mechanism, which, in consideration of its immediate bearing upon the pathology of congestion, of effusion, and even of extravasation, has been more extended than we originally designed, than by quoting the following practical observations of Dr. Todd and Mr. Bowman:—

"This fluid is a valuable regulator of vascular fulness within the cranium, and a protector of the brain against too much pressure from within. So long as it exists in normal quantity, it resists the entrance of more than a certain proportion of blood into the vessels. Under the influence of an unusual force of the heart, an undue quantity of blood may be forced into the brain; the effects of which will be, first, the displacement of a part, or of the whole surrounding fluid, and, secondly, the compression of the brain.

"On the other hand, the brain may receive too little blood. In such a case, if the surrounding fluid do not increase too rapidly, the requisite degree of pressure will be maintained, and the healthy action of the brain preserved. But, if the brain be deprived of its due proportion of blood by some sudden depression of the heart's power, there is no time nor source for the pouring out of new fluid, and a state of syncope, or delirium, will ensue. Such seems to be the explanation of those cases of delirium which ensue upon hæmorrhages, large bleed-

inga, or the sudden supervention of inflammation of the pericardium or endocardium."—*Physiological Anatomy*, p. 298.

Of the Spinal Cord.—With the exception of the volume of M. Foville, which is the first part of a complete treatise on the anatomy, physiology, and pathology of the cerebro-spinal system, we do not find, in the works before us, any very novel facts relating to this nervous centre, so far at least as human anatomy is concerned. The description by M. Foville, in addition to a full account of what was already known, also contains several new facts. Thus, besides the antero-lateral and posterior columns admitted by all anatomists, M. Foville has represented, in the excellent plates accompanying his work, two narrow fasciculi which, continuous superiorly with the posterior pyramids of the medulla oblongata, run downwards close on the outer side of the posterior median fissure, and thus "extend from the calamus to the lumbar extremity of the cord."—(*Traité Complet de l'Anat. &c.*, p. 283.) Several writers, Haller, Rolando, Chaussier, and Mayo, had previously noticed a small fasciculus proceeding from the posterior pyramids, but then it was usually asserted that it was confined to the cervical part of the cord, or, according to Mr. Mayo, to the superior two-thirds: Cruveilhier, however, distinctly affirms that these small cords are prolonged throughout the whole length of the medulla spinalis, and with this concurrent testimony the existence of such a structure can be no longer doubtful. Another, and till this time unknown, fasciculus, is a narrow band of fibrous matter, placed on the lateral aspect of the cord, along the whole of which it extends; superiorly it passes between the corpus olivare and c. restiforme, and then, which is an interesting fact, joins the crus cerebelli, and thus ultimately penetrates into the cerebellum.—(*L. c.*, p. 285., *and Planche* 1, *fig.* 3.)

The connections of the various parts of the cord—a point of considerable importance in reference to the actions of this organ—are carefully investigated by M. Foville. The most important results are as follows: all the white masses, which enter into the formation of the cord, resolve themselves into longitudinal fibres, which are disposed nearly in the same manner in all the columns or fasciculi: the anterior column is intimately united by fibres, similar to those of the column itself, to the anterior commissure, which thus serves to connect together the two anterior columns; the posterior column seems to be united by a fusion of substance with the central gray axis of the cord, and is also united with the posterior white commissure; it is not certain whether any white fibres pass from the lateral column to the internal axis of the cord; the anterior white commissure is not simply an apparatus of connection, but is composed of fibres which, derived as stated above, from the anterior columns, really decussate; lastly, the gray substance is "formed of fibres interlaced with an enormous number of blood-vessels, and, as it were, sprinkled with a reddish-gray powder, to which it owes its colour."

These details indicate, what is seen in all the other nervous centres, a most intimate union, namely, between the fibrous and the vesicular or gray substance, a disposition which is doubtless essential to innervation. The account formerly given by Rachetti and Rolando of this arrangement is so clear, that we are induced to transcribe the following passage, taken

from Weber's Anatomy: "Rachetti remarks that the white substance is divided into layers by gray lines, which run outwards from the gray centre. The same disposition is noticed by Rolando, who states that the fibrous substance consists of a folded medullary membrane, the convoluted edges of which are turned alternately towards the centre and towards the periphery, and run through the whole length of the cord: between the layers of these folds, thin processes of the pia mater penetrate from without, and delicate laminæ of the gray substance from within." Foville notices a disposition of the white fibres presenting a radiate appearance in the transverse section, evidently depending on the vasculo-cellular septa above-described, converging from the circular periphery of the cord towards the centre.

A question which, though of little consequence, has commanded much attention, relates to the existence of a central canal in the spinal cord. Stilling and Wallach admit this formation and place it in the gray substance, whilst Dr. Todd regards it rather as being the patulous mouth of a blood-vessel. Foville says there is a central canal, or ventricle as he terms it, constantly existing in vertebrate animals, and also in man at an early age; he has also met with it accidentally at all other epochs of life, but in such cases its demonstration is difficult. We are convinced that there is in young animals a distinct central passage, which is readily displayed by Stilling's method, that of making very thin transverse sections; but we are doubtful as to its persistence in the fully-formed cord.

ORIGIN OF THE SPINAL NERVES.—This has become, since the great discovery of Bell, a point of primary importance; and yet, although it would seem as if we were approaching a solution, and although some of the works named in the present article have undoubtedly given us some new facts, the exact relations of the roots of the spinal nerves with the cord, are not satisfactorily made out.

Dr. Todd thus alludes to the opinion of Mr. Grainger, that each root of the spinal nerves divides into two sets of fibres, one penetrating into the gray substance, and the other becoming continuous with the white fibrous structure.

"I have repeated the dissections of the two roots of the nerves in the manner described by Mr. Grainger, and am enabled to confirm his general results. It appeared to me, however, that considerably the greater number of the fibres passed in at right angles, whilst those which might be supposed to take an upward course were few and indistinct, and seemed rather to pass obliquely inwards and slightly upwards than to approach the vertical direction. In short, when the fibres had penetrated the medullary substance, they seemed to diverge from one another,—those which occupied a central position preserving much more of parallelism than either the upper or the lower ones. It is extremely difficult to demonstrate the direct continuity between the fibres of the nervous roots and those of the cord."—*Cyclop. of Anat.*, p. 660.

In the somewhat more recent work of this gentleman and Mr. Bowman (*Physiological Anatomy*,) an opinion, in some respects, opposed to the above is advanced. In alluding to the several hypotheses which have been advanced respecting the nervous agency ministering to the sensori-volitional and excito-motory phenomena, these writers thus express themselves:—

"The third hypothesis appears to us to admit of fewer objections than either of the others, and to be more consonant with what seems to be the correct anatomy of the cord. It supposes that the mechanism of a mental and that of a physical nervous action are essentially the same, differing only in the nature and the mode of application of the stimulus. The same *afferent* and *efferent* fibres are exerted in the one case as in the other: the former acting as *sensitive* or *excitor*, or both; the latter as channels for *voluntary*, *emotional*, or strictly *physical* impulses to motion.

"This hypothesis is content to assume that fibres of sensation and voluntary motion do not pass beyond that particular segment of the cord with which they are connected; and that each segment of the cord communicates readily with the brain through the horns of gray matter, or through commissural fibres which pass between the segments of the cord, and from the upper segment of the latter to the brain. The anatomy of the cord, so far as our present knowledge extends, is favourable to this hypothesis, for it is much more probable that all the roots of the spinal nerves are implanted in their proper segments of the cord, than that some pass up to the brain, and others remain in the cord." P. 329.

The account given by M. Foville of the origin of the spinal nerves is not very minute; he affirms, however, as clearly demonstrated by observation, that "the nerves of the posterior fasciculus, (these are the posterior roots of other anatomists) plunge by some of their roots into the gray substance of the posterior fasciculus, and unite by other roots with the fibrous substance of this same fasciculus."—(*L. c., p.* 500.) Further on it is stated, that the anterior roots are similarly connected in part with the fibrous, in part with the gray substance. This description of the nerves in man corresponds with the researches of Budge into those of the frog, noticed in our last number (Med. Chir. Rev., p. 14,) so far as relates to the connexion with the fibrous and gray substances. Professor Valentin contends for the perfect union of the nerve-fibres with those of the cord, a junction which he has depicted in his earlier work on the nerves, and which he thus describes in his physiology:—

"Microscopical investigation teaches that the primitive fibres of the sentient and motor roots are directly continued into the corresponding fibres of the spinal cord; that they in this place decrease in size; and that they then ascend in different ways towards the brain;" and a little further on he lays it down as an essential point, that "the spinal cord takes up or receives into itself successively all the sentient and motor roots of the individual nerves, and transmits them to the medulla oblongata." (*L. c.*, p. 738.)

The conclusion we draw from all these investigations and from our own examination is, that each root of the compound spinal nerve is continuous by some of its fibres with the white fibres of the cord, and by others, with the gray substance; and we may further add that, in this view, we are corroborated by the opinion of several excellent observers.

OF THE ENCEPHALON.—It would not be doing justice to Dr. Todd, if we did not call attention to the excellent description he has given of the structure of the brain; indeed, we have no hesitation in saying, that the several articles relating to the nervous system contributed by this gentleman in the Cyclopædia of Anatomy, and which bear the impress of great labour and research, embody all that is known upon this comprehensive subject, and may be safely relied upon by those who are debarred from re-

ferring themselves to the original authorities. Some interesting tables are given to show the relative and absolute weight of the encephalon; and which, being based upon extended data, especially those of Dr. J. Reid, are probably more approximative to the truth than former calculations. From these calculations it appears that the average weight of the encephalon, between the ages of 25 and 55 years, is in the male 50 oz. $3\frac{1}{2}$ dr. (avoirdupois,)—in the female 44 oz. $8\frac{1}{2}$ dr., giving a difference in favour of the male of 5 oz. 11 dr.; the average weight of the cerebrum is in the male 43 oz. $15\frac{3}{4}$ dr.—in the female, 38 oz. 12 dr.; of the cerebellum, male 5 oz. 4 dr.,—female 4 oz. $12\frac{1}{2}$ dr.: of the pons and medulla oblongata about one ounce. Tiedemann, in reference to this difference in the two sexes, observes that—

"Although Aristotle has remarked that the female brain is absolutely smaller than the male, it is nevertheless not relatively smaller compared with the body; for the female body is, in general, lighter than that of the male. The female brain is for the most part even larger than the male, compared with the size of the body." *Cyclop. of Anatomy*, p. 665.

The large comparative size of the brain in infants and young children is well known; and it is interesting to observe that, before the sexual desires are developed, the cerebrum appears to be absolutely larger in the male than in the female sex: thus, from one to four years, the encephalon in the male weighs 39 oz. $4\frac{3}{5}$ dr., in the female 37 oz. 9 dr. A decided diminution in the average weight of the brain was noticed by Dr. Reid in females above 60 years of age; but among males, this was not apparent until a later period. This change is accompanied with an increase in the quantity of the cerebro-spinal fluid, which particularly accumulates in the sulci between the atrophied convolutions, as it also does in the brains of people in the prime of life, who have for some time been addicted to excessive indulgence in ardent spirits. Dr. Todd regards this accumulation, and we think with justice, as being of a conservative kind; and adduces it as a warning to practitioners, not to attribute too much importance to liquid effusion upon the brain and spinal cord, as a cause of morbid pressure.

It appears that the brain of Cuvier weighed as much as 59 oz. 4 dr., and that of Dupuytren 59 ounces troy weight; but it is well to bear in mind, that both these eminent men died with the brain in a diseased state. The general result of Tiedemann's well-known observations on the relative capacity of the skull (ascertained by first weighing the cranium and then finding out the quantity of millet seed contained within it) is, that the brain of the Negro is upon the whole quite as large as that of the European and other races; the examples of skulls of the smallest capacity were found among Hindoos and Americans. Other evidence leads to the same conclusion, and it may be well to notice that the measure of the facial angle, as suggested by Camper, which appeared to give opposite results, has been entirely abandoned by physiologists as a test for measuring the actual development of the brain.—*L. c.*, 662 *et seq.*

*Cerebral Convolutions.*—In the Physiological Anatomy there is given an interesting sketch, principally taken from the observations of M. Leuret, relating to the arrangement of the convolutions. It is certain, notwith-

standing the apparent confusion, that these important organs, for as such they ought to be regarded, observe a definite order, their disposition being determined by certain leading or typical convolutions which have been long known to anatomists, although there is some discrepancy in the accounts given of their number and disposition. Foville arranges the convolutions in the human brain in four classes. 1. A single convolution lying upon the corpus callosum and winding around the borders of it to the base of the cerebrum; it is called by Foville *l'ourlet* (hem or border.) 2. This class comprises two convolutions, which proceed from the locus perforatus, run forwards, then upwards and backwards, one along the inner border of the hemisphere, the other at some distance on the outer side of the last, and so reach the posterior edge of locus perforatus. Thus, it is seen that "the single convolution of the first order and the two of the second class, are all great lines irregularly circular, situated in an antero-posterior and nearly vertical plane, and united to the limits of the locus perforatus" 3. These serve as a means of union between the convolution of the first order and the two of the second. 4. These, irregularly disposed on the convexity of the hemisphere, fill up the interval of the two convolutions of the second order.—(*L. c.*, p. 191.)

According to Leuret, the term of convolution ought to be confined to the primary formations, the smaller ones forming angles with them, being, in his estimation, mere folds derived from the leading convolutions and connecting them together. It was affirmed by Gall and Spurzheim—"that the presence and number of the convolutions are in direct relation to the volume of the brain, but Leuret has shown that such is far from being universally the case." An extended enquiry into comparative anatomy confirms this assertion, and distinctly proves that the principle regulating the development of the convolutions relates not to the absolute or even relative size of the cerebrum, but to the rank of the animal in the zoological scale, which last may perhaps be assumed as measuring in a general way the grade of intelligence. Thus, whilst in animals below the mammalia the hemispheres are perfectly smooth, it is found that the convolutions begin to appear, though in a simple form, in the monotremata and marsupiata, and increase in number and complexity in ascending to the ruminants, carnivora, and quadrumana.

The minute structure of the convolutions displays a more complex character than is generally known. These bodies, for example, are not exclusively formed, as it is often supposed, of the gray substance only: there enters into the composition of all, but in varying degrees, the fibrous matter, which in some regions presents an intricate disposition. The authors of the Physiological Anatomy give the following description:—

"That portion of the gray layer which is in contact with the pia mater is purely vesicular, *i. e.*, unmixed with nerve-tubes, with the exception of a few stray ones on the surface; but blood-vessels penetrate it in very great numbers. The more deeply-seated portion, however, contains very numerous tubular fibres, which become larger as they approach the white matter. It is very plain that a large proportion of the constituent fibres of the white matter of the convolutions penetrate the gray matter: these appear to enter it more or less at right angles to that portion of the gray surface with which they are more immediately in relation; and, on the other hand, they converge inwards towards the central parts of the brain, the corpora striata and optic thalami. A large proportion, there-

fore, of the white substance of the hemisphere, the *centrum ovale*, consists of fibres which establish a communication between the gray undulating surface and these central gangliform bodies."—*L. c.*, p. 283.

Remak, who is well known as a minute investigator of the nervous system, has also briefly described and represented the texture of the convolutions. According to this writer, there are, in each of these organs, not less than six different layers, consisting of three very thin laminæ of white substance, following the curves of the convolutions, one of which is placed on the exterior, forming a kind of cortex; and of three interposed layers of gray matter, abounding in ganglionic globules or vesicles. In addition to these plates there are the fibres radiating from the interior of the hemispheres, and which, according to Remak, lose themselves by degrees in the most external of the gray layers. (*Müller's Archiv*, 1844, p 468, and Taf. XII.) When to all this elaborate structure we add, that an immense quantity of blood incessantly streams through the convolutions, we shall be enabled to form some conception of the kind of instrument in which the nervous force is generated, or at all events through which it is displayed.

The only work which contains any new researches into the anatomy of the brain, is that of M. Foville, and indeed many of the opinions therein advanced have already appeared in various publications. The views of M. Foville, which are in many essential points different from those of other authorities, have commanded considerable attention among his compatriots, but we are not aware that any English writer has adopted them; they are, however, so important, and, if confirmed, would so entirely modify received opinions, that we propose, now that they are brought forward in a finished form, to lay them before our readers as much in detail as our limits will permit.

M. Foville's first researches were communicated to the Academy of Medicine in 1825; but we shall avail ourselves of his article "*Encéphale*" (contained in the Dictionnaire de Med. et de Chir. Pratiques, 1831,) to indicate the first steps of the inquiry. The author there affirms that each peduncle of the brain (crus cerebri) is composed of two distinct layers, one of which, the anterior inferior, is the continuation of the anterior pyramid of the medulla oblongata, which it is well known traverses the pons Varolii; the other, or posterior fasciculus, is in like manner the continuation of a part of the medulla oblongata posterior to the anterior pyramid, which passes above the fibres of the pons and forms the floor of the 4th ventricle. These two layers, closely approaching each other, but still kept distinct by the interposition of the locus niger, penetrate, the anterior into the corpus striatum, the posterior into the optic thalamus, and radiating in these bodies, reach their outer border: here a most important disposition commences, by their dividing into three planes perfectly distinct from each other, an internal, a superior, and an inferior. The internal plane, called the ventricular, turns upwards and then curving inwards towards the median line, forms, by its union with that of the opposite side, the corpus callosum. The superior plane, called that of the hemisphere, passes at first upwards parallel with, and back to back (*adossé*) to that of the corpus callosum, but at the point where the latter bends inwards, this plane passes nearly vertically to reach the gray substance of the convolutions,

in the whole length of the most elevated part of the hemisphere. The inferior plane descends around the exterior part of the corpus striatum, surrounds this body inferiorly, and, approaching the median line, mounts upwards in juxta-position with the corresponding plane of the other side to form by their union the septum lucidum.

In the work lately published, and of which the title is inserted at the head of this article, M. Foville has gone into a much more detailed and very interesting account of the fibrous and other parts of the brain. The fibres of the anterior pyramid, which we have seen pass to the hemisphere, are stated there to divide into two planes, both destined exclusively to the convolutions which form the superior and convex part of the hemisphere, and which belong especially to the second class already enumerated. The fibres emanating from the posterior part of the medulla oblongata equally with the last divide into two planes, of which the superior and larger advances into the corpus striatum, and then curves upwards to form the corpus callosum. The inferior plane, although the smaller, has extensive and important ramifications: passing from the centre of the thalamus, it winds in such a manner as to surround with a complete and very remarkable ring the ascending fasciculus from the anterior pyramid; turns in front of the lateral part of the foramen of Bichat, and at length, having furnished roots to the optic and olfactory nerves, forms between the anterior and middle lobes a white space called perforated quadrangle (*quadrilatère perforé.*) This space forms a kind of centre, from which proceed numerous arciform fibres, constituting a certain number of fibrous circles, surrounding the plane of the crus cerebri derived from the anterior pyramid, and terminating in a peculiar manner in the hemisphere at the same perforated space. Foville thus enumerates these circles or rings:—1. Tænia Semicircularis. 2. An analogous band to the last, not before known, which surrounds the outer border of the corpus striatum as the other does the thalamus. 3. The half of the formix and corpus fimbriatum. 4. The median longitudinal band of the corpus callosum. 5. The remarkable fibrous band called l'ourlet. Prior to the publication of Foville's late researches, M. Gerdy had recognised and described the annular disposition of those parts of the brain which crown the superior portion of the crus cerebri. He admitted the parts just enumerated, but also included the corpus callosum and even, which is clearly erroneous, the tella choroides.

From his investigations Foville draws several important anatomical deductions. With respect to the convolutions, however numerous, they form but two groups: one set occupying, as we have seen, the convex surface of the hemisphere, crown the top of the ascending fibres of the anterior pyramids, and are therefore in relation with the anterior part of the spinal cord, and with the anterior roots of the nerves; the other set, consisting especially of the "ourlet," the convolutions on the flat surface next the falx major, and those forming the *insula*, are placed on the course of the fibres coming from the posterior part of the medulla oblongata, and are continuous not only with the posterior roots of the spinal nerves, but with the sentient cerebral nerves, the olfactory, the optic, and the acoustic. He further holds as a fundamental position that "all parts which enter into the composition of the cerebrum either proceed from, or return to, the peduncular region;" and moreover, that "whatever parts be examined, they pre-

sent two directions, two forms altogether distinct, of which the different groups of convolutions offer the types." This disposition is also evidenced in the fibres, of which one set are *circular*, seen in the fibrous ribbon of the "ourlet;" and the other set *radiating*, seen in those expanding in the hemisphere. The author remarks that—"this double direction in all the superficial and deep parts of the encephalon has not hitherto been the object of an attention proportional to its importance." "There is, however, in the combination of these antero-posterior circles and of rays diverging from the base of the brain to the circumference of all these circles, something so remarkable, that we may, I believe, give it as the character par excellence of the brain of all mammiferæ."—(*L. c.*, pp. 350, 356.)

M. Foville then proceeds to explain his views of the signification of the remarkable organization he believes he has thus detected. He contends that the brain contains two elements quite distinct from each other: one of these, which he calls the *cerebral nucleus*, or central cylinder of the brain, is composed of two symmetrical halves anastomosing on the median line, and comprising more especially the corpus callosum, the corpora striata and the optic thalami; the other element consists of the hemispheres, each of which, convex without, is concave within, where it covers the central cylinder or cerebral nucleus, to which it is united by fibrous fasciculi derived from the anterior, inferior plane of the cerebral peduncle or crus. The speculations of the author upon these parts, we prefer giving in his own words. "In considering the ensemble of the parts just described, we cannot avoid feeling the analogy of the central cylinder or nucleus of the brain with the spinal cord. Like the cord, it is hollowed by a ventricular cavity; like the cord, it contains in each of its halves two distinct masses of gray matter, separated the one from the other by layers of white matter; further, this central cerebral cylinder presents, like the cord, an entirely white surface on the exterior. Lastly, we find another point of resemblance between the spinal cord and the central cylinder of the brain, in the two layers of fibrous matter, which unite the hemisphere to the central cylinder; these two fibrous layers represent the two lines of nervous roots, which detach themselves from the surface of the spinal marrow, and converge towards the spinal ganglions. Under this point of view, the central cylinder of the brain is nothing else than the encephalic prolongation of the spinal cord; the cortical layer of the cerebral convolutions would be assimilated with the ganglions developed upon the roots of the spinal nerves; and these roots of the spinal nerves would have, for analogues in the brain, the fibrous layers which in two orders are detached from the central cylinder to the hemisphere."—(*L. c.*, p. 361.) It is difficult to comprehend all the anatomical grounds upon which these speculations rest without referring either to the plates (the most explanatory of which is pl. 13,) or, which is of course better, repeating the examination on the brain itself.

Such is a brief summary of the cerebral system, as it may be termed, of Foville, and it is due to this distinguished anatomist to add, that much importance is attached to his researches by some of the most eminent scientific men in France, among whom may be mentioned the names of De Blainville, Dutrochet, and M. Edwards, appointed by the Academy of

Sciences (the Institute,) and those of Bouillaud, Bouvier, and Blandin, selected by the Academy of Medicine to report on M. Foville's memoir. But, notwithstanding all these high authorities, we feel assured that almost all the peculiar views of this writer are fundamentally erroneous.

As regards the comparison of the central nucleus with the spinal cord, and that of the hemispheres with the spinal ganglia, we are not exactly aware whether this is intended as a mere morphological or as a physiological analogy; if the latter is indicated, we would observe that, in the present state of knowledge, it must be regarded as a mere surmise, for no experiments have hitherto been performed sufficiently exact to determine either the use of the spinal ganglia or of the corpus callosum, corpora striata, and optic thalami. If the comparison relates only to typical forms, we must remark, that it does not seem to us to rest upon the only safe ground for such hypotheses, namely, developmental and comparative anatomy; and more especially we hold the speculation as to the hemispheres and the spinal ganglia, as totally fallacious. With respect also to the favourite notion of M. Foville, that the corpus callosum is derived from the fibres of the crus cerebri, and not from those of the cerebral hemispheres, we are ourselves satisfied, after an extended observation, that that body is in reality, what it is generally affirmed to be, the great transverse commissure of the brain; and on this point we are happy to be able to quote the words of an eminent anatomist, Mr. Mayo, who, in allusion to the opinion of M. Foville, justly observes, "the cerebrum, which has so many parts in correspondence with parts of the cerebellum, would then want the most striking feature of all, the analogue of the pons Varolii"—a supposition which, when the strictness of the organic laws of formation is recollected, is utterly untenable. There is in addition this great confirmation of the received opinion, the configuration, namely, of the corpus callosum; a vertical section shows it to be thinner in the middle than at the extremities, and thicker at the posterior than at the anterior end—a disposition which is explained by admitting that it receives in the centre the fibres from the hemispheres opposite to that part, whilst at the extremities it collects, in addition, the converging fibres proceeding from the anterior and posterior lobes.

We would further point out to the notice of our readers, that the views both of M. Gerdy and of Foville, respecting the series of rings or annular fibres, are for the most part opposed to the opinions commonly received, especially in this country. The doctrine advocated among us is, that the fornix and the remarkable fasciculus contained within the convolution above the corpus callosum (the part called "l'ourlet" by Foville) are longitudinal commissures, a view supported by our own dissections, and especially by those of Mr. Solly, who has given a bold and accurate representation of these structures. The tænia semi-circularis, and the band described by Foville on the exterior of the corpus striatum, do certainly present the circular disposition; but as to the raphé of the corpus callosum, its signification is not so clear.

Notwithstanding we have felt it to be a duty thus to express our dissent from so large a portion of M. Foville's conclusions, many of his investigations are of considerable value, especially those which show with so much distinctness the course of the fibres proceeding from the medulla

oblongata, and the connexion of the nerves of special sense, the olfactory, the optic, and the auditory, with the prolongation of that portion of the cord which is in relation with the posterior or sentient roots of the spinal nerves; this latter fact, as M. de Blainville points out in his report, gives a powerful support to the theory of Bell. There can, also be no doubt that a portion of the spinal cord is to be recognised in the interior of the encephalon, including the optic tubercles, the optic thalami, and perhaps the corpora striata, but not, as Foville contends, the corpus callosum; this opinion, however, is not novel.

We have devoted so large a portion of our space to the opinions of M. Foville, that we can only extract from the work of Dr. Todd and Mr. Bowman the following exposition of their views regarding that most complex and important part of the brain—the fibrous apparatus connected with the corpus striatum.

"When thin sections of the corpus striatum are examined by transmitted light, the smallest bundles of fibres observable in them appear to consist of tubules reduced to their minutest dimensions, and closely united to each other. So compactly applied are they, that very little light passes through or between them. Hence they appear to be dark masses lying in the substance of the ganglion, and, from their opacity, it is very difficult to determine their exact relation to the elements of the vesicular matter. Many of the bundles, however, appear to us to attach themselves, at different parts of the ganglion, as if around a large vesicle of which, with its nucleus, we have sometimes seen indications at one extremity of the dark mass of aggregated fibres. Other bundles of fibres appear to emerge from the corpus striatum, and to contribute to form the fibrous matter of the hemisphere."

"Thus, three sets of fibres may be described as existing in the corpus striatum: 1st, those which below enter into the formation of the crus, and above are connected with that ganglion: 2ndly, those which are connected inferiorly with the corpus striatum, and above with the cerebral convolutions; and lastly, those which pass from the white substance of the hemispheres through the corpus striatum to the crus cerebri. And of these three sets of fibres, the first serves to connect the corpora striata with the mesocephale and medulla oblongata: the second to connect the cerebral convolutions with the corpora striata; and the third to connect the convolutions with the mesocephale and medulla oblongata. It must be confessed, however, that the evidence upon which the existence of the third class of fibres rests is less satisfactory than that for the first and second, although most of those anatomists who are contented with coarse dissection seem to recognize only the third class."—*Phys. Anat.* p. 277.

We feel it necessary to express our conviction, resting on repeated and minute dissection, that the third class of fibres, or those proceeding from the crus cerebri, are distinctly continued into the substance of the hemispheres and convolutions.

RELATION OF THE SKULL TO THE BRAIN.—The second division of the volume, lately published by M. Foville, bears upon this question, so much agitated in late years, especially by phrenologists. The author contends that, although the contour of the cranium is modified by the form of the convolutions, this is altogether subordinate to the influence exerted by the lateral ventricles and their prolongations or cornua. The deep investigation of the protuberances of the encephalic box, it is said, does not allow of any doubt upon this point: thus the frontal protuberance corres-

ponding to the anterior horn is, like it, round or oval; the occipital protuberances, but especially the fossæ which correspond to them internally, are like the corresponding part of the ventricle, the posterior cornu, a little more acute than the former; the temporal projections are oblique like the temporal regions of the lateral ventricles; lastly, the convexity of the sincipetal region is perfectly in relation with the arching of the upper surface of the corpus callosum. The influence of the convolutions is, as we have seen, secondary, but still it may considerably modify the external configuration of the skull; if, for example, the convolutions are very large, the cranium maintaining always its general form, which the ventricles impress, swells in the intermediate regions, and consequently the protuberances, are but slightly pronounced; whilst, on the contrary, in persons in whom the convolutions have only a medium development, the frontal, parietal, and occipital protuberances are very apparent. In the first case, to borrow the characteristic expression of Foville, "the form of the cranium is more cerebral than ventricular, whilst, in the second, it is more ventricular than cerebral."—(*L. c.*, p. 102.)

We are inclined to regard these observations as throwing a new light upon the relations existing between the form of the skull and of the surface of the brain; but the evidence of developmental anatomy, which in questions of this kind is of paramount importance, appears to be opposed to the theory of Foville. Most of our readers are doubtless aware that, in the primordial cranium, there exist three distinct divisions or cranial vertebræ, which are unquestionably formed in reference to the three primitive cells into which the portion of the nervous system, contained within the head, is in the embryo divided; but it is found that, although the anterior vertebra or segment, of which the future os frontis is a portion, does correspond with the cerebral hemispheres, and therefore in a general manner with the lateral ventricles, yet the middle vertebra, comprising the future parietal bones, and a part of the sphenoid, corresponds with the corpora quadrigemina; whilst the posterior segment, the future os occipitis, corresponds with the medulla oblongata. Viewing the skull in this way, there appears to be a discrepancy between Foville's investigations and those connected with embryology, which at present cannot be reconciled.

PHYSIOLOGY OF THE NERVOUS SYSTEM.—Having pointed to some of the more interesting and novel facts connected with the anatomy of the nervous system contained in the several works before us, we proceed briefly to notice their contents in relation to physiology. And in the outset it will not be superfluous to state, as a fundamental principle, that all nervous force is restricted to the so-called gray matter, or, to borrow the language of the authors of the Physiological Anatomy, "the vesicular is the true dynamic nervous matter, the source of all nervous power." This position rests upon ample evidence, the principle of which is embodied in the following proofs:—

"1. Nerves, when separated for a time from the nervous centre, lose all power of stimulating their muscles to contraction. No irritation, mechanical or electrical, is sufficient to excite them. If a nerve be divided some distance from the centre, the peripheral portion will, after a time, waste, and lose all power of

developing nervous force; but the central portion, which remains in connection with the centre, retains its nutrition and its vital properties unimpaired.

"2. All nervous centres contain vesicular matter, with which nervous fibres freely intermix.

"3. The power of a nervous centre appears to be proportionate to the quantity of its vesicular matter. This is well exemplified in the cerebral convolutions, the vesicular surface of which is always in the direct proportion of the development of mental power; or, in general terms, *the gray matter increases in the exact ratio of the nervous energy.* (Grainger.)

"4. All nerves appear to arise from vesicular matter. Stilling represents special accumulations of vesicular matter at the origins of the nerves of the medulla oblongata.

"5. Nerves, whose power is exalted for some special purpose, have an increased quantity of gray matter at their origin, of which the electric lobe in the torpedo, connected with the origins of the fifth and eight pairs of nerves, is an extraordinary instance." (Grainger.)—*Physiol. Anat.* p. 322.

Another truth not less essential is, that the ultimate nervous tubes act as isolated conductors, or, to borrow the words of Valentin, "each peripheral primitive fibre conducts its stimulus, so long as it is confined to the peripheral nerve, entirely in an isolated manner, never transferring it either to a neighbouring or to a remote fibre, whether this be of a similar or heterogeneous nature."—(*L. c.*, p. 587.) We regret that our space will not allow us to lay before our readers the clear demonstration of this law, as relates to the sentient and motor nerves, and also to disease, contained in the physiology of this distinguished writer; suffice it to say that, the capability of experiencing local sensation, healthy and morbid, and the power of determining individual muscular actions, involve of necessity the agency of insulated, that is of independent, conductors. Valentin also conceives that, with some very rare exceptions, probably dependent upon their development, the nervous corpuscles act in an isolated manner; at all events these globules are not only separated from one another, but each of them is embedded in its proper sheath. This being the fundamental truth, it is altogether a question of subordinate importance to ascertain how the insulating power is effected. We have ourselves thought it might depend on some property of the neurilemma or investing membrane of the tubule, and this appears to be a more probable explanation than that advanced by Dr. Todd and Mr. Bowman, who conceive that there is "a provision for the insulation of the central axis of each nerve-fibre in the white substance of Schwann," thus making a considerable portion of the neurine itself inactive in innervation. These writers think that the fibres of the sympathetic want of power of insulation possessed by the tubular nerves, an opinion in which, however, we do not concur, and which probably originated in the absence of the white matter of Schwann in these gelatinous fibres.

We are as far as ever from knowing anything of the actual nature of the nervous force. Most physiologists in the present day are satisfied that it is in no way identical with the electric power, a conviction, which, shaken for a time in some quarters by the researches of Dr. W. Philip, was greatly strengthened by the well-contrived experiments of Professor Müller. The deeply-interesting discovery of Matteucci might perhaps tend to the revival of the electrical hypothesis, and we therefore think that

Dr. Todd and Mr. Bowman have rendered an acceptable and timely service to the cause of science, by the careful and extended comparison they have instituted between the nervous and electrical forces. After showing in what points these subtle powers correspond, and in what they disagree, they give these general conclusions:—The results of experiment certainly afford no support to the advocates of the electrical theory; and indeed there are difficulties in the way of obtaining the necessary conditions for a satisfactory result, which of themselves invalidate the experiments which have been reported to prove favourable to that theory."

"The proofs, therefore, of the passage of an electric current through the nerve-fibres during nervous action, must be held to be altogether defective. Not only is experimental evidence wanting to support the electrical theory, but certain facts are admitted which greatly invalidate it. Of these, a very important one has been adduced in the preceding paragraph. The following may be added, some of which have already been adduced by Müller.

"1. The firm application of a ligature to a nerve stops the propagation of the *nervous power* below the points of application, but not of *electricity*. The nervous trunk is as good a conductor of electricity after the application of the ligature as before it.

"2. If a small piece of a nervous trunk be cut out, and be replaced by an electric conductor, electricity will still pass along the nerve, but no nervous force, excited by stimulus above the section, will be propagated through the conductor to the parts below.

"3. Nervous fibre is not a better conductor of electricity than other tissues. Matteucci assigns to muscle a conducting power four times greater than that of nerve or cerebral matter; and Weber states that no substance in the human body is so good a conductor as the metals. From our own observations on this subject, made with the *most delicate* instruments, we are led to state that both nerve and muscle are *infinitely worse* conductors than copper, and that we have failed in detecting any appreciable difference in the conducting power of these two animal substances."—*L. c.*, p. 243.

A similar opinion is expressed by Valentin, who says, in reference to the attempts made at various times to prove the identity of the nervous and the electrical fluids, "all such investigations and observations fall when accurately criticised." He also shows that the phenomena displayed by electrical fishes, when carefully analysed, confirm the conclusion drawn from other sources.

FUNCTIONS OF THE SPINAL CORD.—This interesting subject is very ably and fully discussed by Dr. Todd and Mr. Bowman, and by Valentin; Mr. Newport also gives the results of a series of experiments made upon the myriapoda, which confirm the researches made by other physiologists. The two former writers, after adducing various proofs to show that the spinal cord has a power of exciting muscular action independently of the brain, remark:—

"Some substances exert a peculiar influence upon the spinal cord, and throw it into a state of considerable polar excitement. Strychnine is the most energetic substance of this class. If a certain quantity of this drug be injected into the blood, or taken into the stomach of an animal, a state of general tetanus will quickly ensue, sensibility remaining unimpaired. The slightest touch upon any part of the surface, even a breath of wind blown upon it, will cause a general or partial convulsive movement. The whole extent of the cord is thrown into this

polar state, and even the medulla oblongata is involved in it; whence the closed jaws, the spasmodic state of the facial muscles, the difficult deglutition. In this remarkable state of excitement it is curious to observe that the spinal cord is perfectly natural in point of structure, as far as our means of observation enable us to judge. We have examined some spinal cords of animals which have died exhausted by the effects of the strychnine, but have always found the nerve-tubes and other elements of the cord exhibiting their natural appearance." P. 314.

Nothing seems to control this polar state of the cord, which may be induced readily, especially in the frog, so effectually as cold: "ice applied along the spine, or the cold douche, may be frequently employed with great advantage in cases of muscular disturbance dependent upon this polar state of the cord."

One of the most difficult questions in physiology is to determine the offices of the individual columns which we have described as constituting the entire cord; and the addition of at least two new fasciculi—we allude to the narrow lateral bands discovered by Foville—does not render this a more easy task. Our readers need hardly be reminded that the best and latest investigations, especially those of Valentin, Seubert and Longet, have entirely corroborated the great fact announced and proved by Bell, namely, that the anterior root of each spinal nerve is motor, and the posterior sentient. The latter being stimulated will, however, determine muscular contraction upon the excito-motory principle; whilst the former will produce pain, as Magendie had affirmed; and in consequence of an anastomotic filament, which Kronenburg has shown, it derives from the posterior root. But, although the offices of the two roots are determined, it does not follow that the anterior and posterior columns or fasciculi bordering the median fissures, partake in the same properties, and are respectively connected with motion and sensation. If, indeed, "it could be proved that the anterior or motor roots were exclusively connected with the antero-lateral columns, and that the posterior or sensitive ones arose exclusively from the posterior columns, then there would be good anatomical grounds for the doctrine so long erroneously prevalent, that the functions of these columns coincided with those of the roots, that the posterior columns were sensitive and the anterior motor." In opposition to such an inference, we may state that, after a careful examination, we have failed in tracing a single nerve-fibre into either the anterior or posterior fasciculus, all the fibres which do not penetrate into the gray axis, being lost in that lateral part of the cord which is placed between the anterior and posterior lateral sulci. Neither comparative anatomy nor direct experiment throw much light on this question.

"Nor do we derive much positive knowledge from the researches of the morbid anatomist. Cases, indeed, are on record, which show that disease of the posterior columns does not necessarily destroy sensibility; that perfect sensibility is compatible with total destruction of the posterior columns in some particular region, the posterior roots remaining intact; and others have occurred in which sensibility has been impaired or destroyed, while the posterior columns remained perfectly healthy. In a remarkable case, related by Dr. Webster, there was complete paralysis of motion in the lower extremities, but sensibility remained; yet there was complete destruction of the posterior columns in the lower part of the cervical region. Similar cases have been put on record by Mr. Stanley and by Dr. W. Budd. Dr. Nasse of Bonn, refers to several cases of the same kind,

observed by himself or others. We have ourselves seen two cases in which the prominent symptom was great impairment of the motor power without injury to the sensitive; yet the seat of organic lesion in both was in the posterior columns of the cord. Such a case as that of Dr. Webster's appears to us to be conclusive, so far as the following proposition extends, namely, that sensation may be enjoyed in the inferior extremities *independently of the posterior columns;* and that, even if those columns be sensitive, there must be some other channel for the transmission of sensitive impressions besides them."—*Physiol. Anat.* p. 316.

Dr. Todd and Mr. Bowman suggest that the posterior columns may be in part commissural, uniting the various segments of the cord and so combining their actions, a view which is thought to be supported by the existence in the brain of longitudinal commissures. A stronger argument might, we think, be adduced from the structure of the abdominal (spinal) cord of the articulata, in all of which, though more plainly in some than in others, the individual ganglia are united by longitudinal commissural fibres. These gentlemen thus sum up their conclusions upon this interesting subject:—

"The hypothesis, then, which we are most disposed to adopt, is the following:—That *the antero-lateral columns of the spinal cord with the gray matter* are, in connexion with the brain, the recipients of sensitive impressions and volitional impulses, and that they are the centres of the independent or physical nervous actions of the cord; and that *the posterior columns* propagate the influence of that part of the encephalon which combines with the nerves of volition to regulate the locomotive powers, and serve as commissures in harmonising the actions of the several segments of the cord."—*L. c.*, p. 321.

We shall have occasion to refer again to this point in connexion with the functions of the cerebrum.

We shall not enter into the details of the reflex actions, as this subject has been so repeatedly discussed in late years, and especially in the several works of Dr. Marshall Hall. It may, however, be proper to notice that Valentin contends against the existence of a special class of nerves admitted by that distinguished physiologist, under the denomination of *incident* and *reflex*. He says, "such a distinction is not correct, if by it we are to understand the existence of peculiar primitive fibres subservient exclusively to the reflex actions; there are at present no facts sufficient to justify such an hypothesis. So far as we know, every sentient fibre is capable of acting as an incident, and every motor fibre as a reflex fibre." He even goes so far as to deny what may be regarded as a most essential part of Dr. Hall's theory, namely, that the reflex action is the property of the spinal cord, to the exclusion of the cerebral system.—(*L. c.*, p. 763.) We will not, for the reason above stated, allow ourselves to be drawn into this vexed question, and therefore shall only express our entire conviction that, on both the points noticed, Valentin is in error.

PHYSIOLOGY OF THE BRAIN.—The portion of Valentin's work treating of the physiology of the brain contains a complete exposition of all the existing knowledge on the subject, and especially of the results obtained by vivisections, but advances little that is new. Although there is no branch of experimental physiology which requires more caution in interpreting results, or which has led to more error and confusion than that

which relates to the functions of the several parts of the encephalon, yet many important facts have by this means been obtained, and among the rest, the remarkable one that the hemispheres both of the cerebrum and cerebellum, the seat of all sensation, are themselves insensible to contact. On this subject Valentin thus expresses himself:—"Considered theoretically, we should expect that the sentient fibres, which proceed from the medulla oblongata, and expand themselves in all parts of the greater and lesser brain, would bestow on these formations, as well as upon medulla oblongata, a high degree of sensibility. But experience gives results for which a satisfactory explanation is still entirely deficient: thus, if the cerebral hemispheres be laid bare in a mammal or bird, an operation which in itself in no degree destroys the capability of perceiving pain, we find that they can be touched and even transfixed without in the least disturbing the animal; it only struggles and cries out when the trifacial nerve, the crura cerebri, the optic thalami, or the medulla oblongata, are accidentally touched. Again, if the hemispheres be removed by slices down to the centrum ovale, or to the cavity of the lateral ventricle, the animal remains as indifferent as if we were cutting a hair or a nail. The same phenomena have also been repeatedly observed in man; thus, a portion of the hemisphere projecting through a wound of the skull has been removed without producing any action; and, again, parts of the substance of the hemisphere have been taken away by the surgeon in removing pus or foreign bodies without the patient's consciousness."—(*L. c.*, p. 743.)

We have given this extract prefatory to considering that most difficult, and yet most fundamental question—*what is the true organ or seat of sensation and volition?* The phenomena just stated, and more especially the well-known experiments of Magendie, have induced many physiologists to fix upon the medulla oblongata and pons Varolii; but, among many other insuperable objections to this opinion, we may urge with Valentin that, "were it correct, neither the crus cerebelli nor the crus cerebri ought to cause, when irritated, painful sensations." The authors of the Physiological Anatomy, undeterred by the failures of Magendie, Saucerotte, Foville, Longet, and a multitude of other writers, have ventured, with more detail and precision, to define the local habitations of volition and sensation. They observe, in speaking of the medulla oblongata, pons Varolii, corpora striata, and optic thalami, that, "although the anatomist may find it convenient to describe these parts each by itself, it is impossible, in the consideration of their functions, to separate them completely, they are so closely connected with each other, and the functions of one part are so readily affected by any change in those of the other. Thus, the olivary columns, which form the central and most essential part of the medulla oblongata, extend upwards through the mesocephale to the optic thalami; and the anterior pyramids form an intimate connexion not only with the vesicular matter of the mesocephale, but, to a great extent, with that of the corpora striata. All these parts taken together, with the quadrigeminal tubercles, will be found to be the centre of the principal mental nervous actions, and of certain physical actions which are very essential to the integrity of the economy."—(*L. c.*, p. 342.)

Then follows an investigation of the individual offices of these parts. After alluding to the medulla oblongata as the channel through which the

brain operates on the cord to produce voluntary motion, and as the "primum movens" of respiration and deglutition, the author remarks, "it seems not improbable that the centre of volition is connected with one or both of the gangliform bodies (corpora striata and optic thalami) in which the columns of the medulla oblongata terminate above. When the cerebral hemispheres have been removed, as in Flourens' and in Magendie's experiments, the bird is thrown into a deep sleep, a state of stupefaction, and insensibility to surrounding objects. But he can maintain his attitude—stand—walk, when first propelled—fly, if thrown into the air. This continuance of the locomotive power implies some degree at least of mental or volitional effort. All the animal's movements have much of the appearance of the exercise of will, although, doubtless, many of them are in a great degree excited by physical stimuli. Hence there seems reason to believe that the will exerts a primary influence upon either or both of these gangliform bodies, more vigorous when aided and guided by the power of the cerebral hemispheres. The frequent paralysis of motion apart from sensation, when the upward continuations of the pyramidal fibres in the corpora striata are diseased, renders it extremely probable that these fibres are the media of connexion between the brain and cord in voluntary actions;" and it is subsequently added, "the same line of argument which leads us to view the corpora striata as the more essential parts of the nervous apparatus which control direct voluntary movements, suggests that the optic thalami may be viewed as the principal foci of sensibility, without which the mind could not perceive the physical change resulting from a sensitive impression. The principal anatomical fact which favours this conclusion, is the connexion of all the nerves of pure sense, more or less directly with the optic thalami, or with the olivary bodies."—(*L. c.*, p. 349.)

In connexion with this subject, Dr. Todd and Mr. Bowman have some peculiar views respecting the share which the cord takes in volition and sensation, and on the mode in which its action is called into play; their theory, indeed, is so novel, that no apology is necessary for laying before our readers the following extracts, in which it is embodied:—

"The mechanism of a voluntary action, in parts supplied with spinal nerves, would be, according to this hypothesis, as follows:—The impulse of volition, primarily excited in the brain, acts at the same time upon the gray matter of the cord (its anterior horn,) which, in virtue of its association with the former, by means of the fibres of the anterior pyramids, becomes part and parcel of the organ of the will, and therefore as distinctly amenable to acts of the mind as that portion which is contained within the cranium." P. 330.

"An objection to this explanation will readily be raised, that the excitation of the anterior horn of the gray matter, in the way stated, does not explain the remarkable power which the will has of *limiting* its action to one or two, or a particular class of muscles. We reply to this, however, that there can be no reason for denying to the mind the faculty of concentrating its action upon a particular series of the elementary parts of the vesicular matter, or even upon one or more vesicles, if we admit that it can direct its influence to one or more individual fibres, as the advocates of the first and second hypotheses do. If, indeed, we admit the one, we must admit the other; for whether the primary excitation of a fibre take place in the encephalon or in the spinal cord, the part first affected must probably be (according to our second postulate) one or more vesicles of the gray substance.

"The series of changes which would develop a sensation, admits of the following explanation: A stimulus applied to some part of the trunk or extremities is propagated by the sensitive nerves to the posterior horn of the gray matter of the spinal cord, and from the junction of this part with the brain either through the direct continuity of the vesicular matter of the cord with that of the centre of sensations, or through longitudinal commissural fibres, analogous to, or even perhaps forming part of, the anterior pyramids, this organ is simultaneously affected." P. 330.

"It is not necessary to the development of sensation that the fibre stimulated should be implanted directly in the brain; if it be connected with this centre through the medium of vesicular matter of the same character as that which is found in it or through commissural fibres, all conditions necessary for the development and propagation of nervous force would appear to be fulfilled. It must not be supposed, however, that in making this statement we mean to assign the spinal cord to be the *seat* of sensation; all we assert is, that the posterior horns of its grey matter, as being the part in which the sensitive roots are implanted, participate largely in the mechanism of sensation; and that by their union with the brain they become, *pro tanto*, a part of the centre of sensation, so long as that union is unimpaired.

"This hypothesis offers an explanation of the hitherto unexplained phenomenon of impaired sensation on that side of the body which is opposite to the seat of cerebral lesion. If we regard the anterior pyramids as commissures between the sensitive, as well as between the motor portions of the cerebro-spinal centre, it will be obvious that the posterior horns of the spinal gray matter on the right side will be associated with the left centre of sensation in the brain, and *vice versa*.—*L. c.*, p. 331.

The writers afterwards remark, with respect to the hemispheres, "the convolutions of the brain are *the centre of intellectual action*, or, more strictly, this centre consists in that vast sheet of vesicular matter which crowns the convoluted surface of the hemispheres. This centre is connected with the centres of volition and sensation (corpora striata and optic thalami) and is capable at once of being excited by, or of exciting them."—*L. c.*, p. 365.

Having thus afforded our readers the means for forming their own opinion, we must say for ourselves, that, although highly esteeming the acquirements of the authors, we can in no degree coincide with the hypotheses above stated. So far indeed from agreeing with these gentlemen, we feel it necessary to express our decided conviction, that their views, being opposed both to the principles which govern the nervous system, and to the evidence of comparative anatomy, would, if adopted, tend to obstruct the progress of physiology in one of its most interesting branches. Our limits will not permit us to go into all the evidence on which we rest our opinion, and therefore we must confine ourselves to a very few general remarks. And, in the first place, we would observe, that it is objectionable in principle to admit of three distinct and independent centres of consciousness, (intelligence, volition, and sensation being only forms of consciousness;) for, if such were really the case, three independent sentient existences would be bound up in every animal, a condition which seems opposed to the idea of personal identity and individuality. The circumstance on which so much reliance is placed, of a pure nerve of sense, the optic, being attached to the thalamus, is no more an argument of that gray mass being the centre of sensation, than is the attachment of the

posterior sentient root of a spinal nerve a proof that the corresponding segment of the spinal marrow is a centre of feeling: in both these instances, as far as consciousness is concerned, the thalamus and the cord act only as conductors transporting the impression towards the hemispheres, where alone, as we contend, in all cases the act of perception is consummated. This conclusion is further supported by the fact, that the cord has its own peculiar powers, seen in full operation in anencephalous infants who have survived their birth; and also by the circumstance that, when in injury of the cervical region of the spine, the larger portion of this so-called instrument of sensation is rendered inoperative, the power of consciousness and feeling, instead of being weakened or impaired, remains intact.

We will only notice one more point, and it is this:—the hypothesis of the thalamus being the seat of sensation, receives, as it is affirmed, much support from the anatomy of the brain in the articulata, among which the optic nerve is, in the perfect animal, attached to the supra-œsophageal ganglion, which body, the unquestionable and sole organ of consciousness in these creatures, is thus said to represent the optic thalamus of the vertebrata. It is certain, however, that the brain in the invertebrata is more complex than it is usually conceived to be; a position supported by the valuable dissections of Mr. Newport (*see Med. Chir. Rev. July* 1845, *p.* 11,) who has found, for example, that in the myriapoda the brain is, in the embryo, composed of four pairs of ganglia, of which the second pair receive the optic nerves, whilst those of the antennæ are attached to the first pair. Now, we hold the first pair of ganglions, with the antennal nerves attached, like the olfactory in the vertebrata, as constituting the true organ of consciousness; and thus the encephalic organization of the articulata entirely corresponds with the theory that the cerebral hemispheres are in all classes the true organ of consciousness.

There being so much difficulty in assigning the office of the individual parts of the encephalon, it would be an unprofitable occupation to inquire further whether the corpora striata have a special influence upon the motions of the lower extremities, and the thalami upon those of the upper; all these questions, when experimentally prosecuted, involve such destructive mutilations of the brain and other mischief, that they are never likely to be cleared up by vivisections; we must rather look to the more satisfactory evidence derived from pathology and comparative anatomy.

Our notice has been already so much extended, that we must dismiss the papers of Professor Bidder and Dr. Bernard with a few observations. The former physiologist, some few years ago, published, in conjunction with Professor Volkmann, an interesting work to prove, on anatomical grounds, that the sympathetic nervous system was independent of the brain and spinal cord. In a paper contained in Müller's Archives of last year, he relates some experiments made on frogs, in order to support physiologically the same conclusion. He found that the animals survived the loss of the brain alone ten or fourteen days; if the cord was also destroyed, leaving, however, the medulla oblongata so as to preserve respiration, the frogs lived five or six days; and when the whole of the brain and cord were removed, the animals lived till the second day. The circulation of the blood in the swimming membrane continued after all these mutilations,

and as this proved the persistence of the power of the heart, it must also be received as evidence that the great sympathetic has an energy of its own, unless indeed, which few will maintain, it be assumed, that the circulation is altogether independent of the nervous system. The secretion of urine likewise continued after the destruction of the brain and spinal cord, indicated by an accumulation in the bladder.—(*L. c.*, p. 376.) Some experiments are also related to show that the secretion of the gastric juice and the solution of food persisted, but the evidence of this is unsatisfactory. So far as these experiments upon the frog may be relied on, the inference is, that the ganglionic portion of the nervous system constitutes an independent power, a conclusion which is further supported by reasoning deduced from anatomy.

Dr. Bernard's researches relate to a point on which there exists much contrariety of opinion among physiologists—the true function of the spinal accessory nerve of Willis, and its relation to the pneumo-gastric: is the accessory nerve of motion, or of sensation, or of both—is it a nerve of volition, or of the involuntary class? Some years ago, Dr. Bischoff, of Hiedelberg, performed some experiments which convinced him that the accessory was the motor or anterior root of the vagus nerve; but he has since abandoned this opinion, and adopted the views prevailing among German physiologists, that it is in office a compound nerve of motion and sensation. Bernard points out the necessity of distinguishing between respiration and the voice, which, although they seem to be anatomically confounded, are physiologically independent, and are exercised, as he contends, under antagonistic and distinct nervous influences, although the muscles are in common.—(*Archiv. Gener. de Medicine*, t. 5, p. 68.) He further believes he has shown by experiments, that whilst the pneumogastric is in itself a mixed nerve which governs the motor and sentient phenomena of the three great organic functions, respiration, digestion, and circulation, the accessory is purely a motor nerve, which in a remarkable manner governs the movements of the larynx and of the thorax at all times when those organs are engaged in actions beyond simple respiration, as in the production of the voice, of efforts, &c. In these actions the larynx is vocalized by the internal branch of the accessory, and the thorax by the external branch, so that if the former be divided, the animal, when it attempts to cry, produces no sound, but only executes respiratory movements more active than usual; whilst, if the latter be cut, the larynx retains its power of producing the vocal sound, but the thorax loses its power of extending or modulating it. M. Bernard thus confirms the important distinction first established by Bell between those actions of the cervical and thoracic muscles which are connected with respiration proper and those which are productive of voice; but he has thrown a new light on the nerves interested, for, whilst our illustrious countryman regarded the accessory as of a respiratory, and hence involuntary character, Bernard conceives that it is strictly a nerve of volition. These researches appear to have been conducted with great care, and as they bear on a question of prime import in neurology—the endowments of the respiratory nerves—they are well worthy the attention of physiologists.

On Diseases of the Liver. By *George Budd*, M.D., F.R.S., Professor of Medicine in King's College, London, &c. Octavo, pp. 401. Churchill: London, 1845.

Dr. Budd states, as a reason for his having undertaken the present treatise, that "while the press has been teeming with works on the diseases of the Nervous System, of the Chest, of the Kidney, of the Skin, comparatively few have appeared, of late years, on diseases of the Liver. This, assuredly," he adds, "is not owing to any falling off in our sense of their importance, but to the vague and unsatisfactory state of our knowledge respecting them." We are glad that the task of supplying the deficiency has been taken up by so active and enlightened an enquirer as Dr. Budd, who has evidently turned to the best possible account all the advantages of his former situation of Physician to the Seamen's Hospital on board the Dreadnought, and of his present one of Physician to the King's College Hospital.

The work commences with an introductory exposition of the minute anatomy of the Liver, and of the uses of its important secretion—the Bile. The whole chapter will well repay a diligent perusal; for, although there is perhaps nothing new in the details that are given, the description throughout is clear without being wearisome. The following passage (although taken from a subsequent Chapter) presents a succinct and lucid view of the minute structure of the Hepatic parenchyma.

"We have seen that the lobules of the liver are spaces mapped out by the ultimate twigs of the portal vein, which are hairy, as it were, with capillaries springing immediately from them on every side, and forming a close and continuous network; and that the interstices of these capillaries are filled with nucleated cells. It is in these cells that the vital chemistry of secretion goes on. It is seen by the microscope that in different livers, the cells vary in size; that in some they are almost transparent, in others opaque, and apparently more solid; that in some they contain but a few very small oil-globules, while in others, they are distended almost to bursting with globules of oil; that in some, they are colourless or nearly so, and in others, yellow with bile; that in some specimens, again, they are broken-down and destroyed. It is probable, too, that in some cases the cells are only slowly reproduced; that, without complete destruction, they become less productive of new cells, so that at length the number of active cells is much diminished.

"These differences in the condition of the cells, cause, of course, corresponding differences in the size, colour, and texture of the liver; differences, which were noticed long before that knowledge of the intimate structure of the organ was obtained, by which we are now enabled to explain them." P. 197.

The biliary Secretion serves various most important purposes in the animal economy. One of these purposes is unquestionably that of purifying the blood from certain noxious and effete principles, derived from the continual waste of the body and the metamorphosis of its tissues. The Bile, it is well known, contains a very large proportion of Carbon; and it has therefore been very reasonably inferred that the Liver is one of the emunctories employed by nature for eliminating the superabundance of this element from the system. Viewed in this light, it may be regarded as a co-operating—and, under certain circumstances, a partially-compen-

sating—organ with the Lungs and Skin in the process of decarbonising the blood.

But there is another way in which the Liver tends to maintain the purity of the vital fluid; and to this point we particularly invite the reader's attention, as the explanation bears upon the history of several of the pathological alterations to which the organ is subject, and which we shall afterwards have occasion to bring under his notice.

"It will be remembered that all the blood sent to the stomach and intestines has to pass through this organ, before it can again mix with the venous blood from other parts of the body. Now the blood that has come from the stomach and intestines must necessarily be charged with many impurities, besides those derived from the mere decay of the tissues. Along the extensive mucous tract with which everything we eat or drink is brought in contact, absorption is constantly going on, and various matters must, therefore, enter the portal vessels, not fit by their nature to form blood, or to serve any other purpose in the body. Many of these substances are removed from the blood in its passage through the liver. The discharge of such matters through the liver, when they are in unusual quantity, or of a particular kind, is, no doubt, the primary condition of many biliary disorders." P. 28.

Having discussed the several points connected with the Anatomy and Physiology of the Liver, the author proceeds to describe its various Morbid Conditions. These he has arranged in five chapters; of which, the *first* treats of Congestion; the *second*, of Inflammation and its Consequences; the *third*, of "diseases which result from faulty nutrition of the liver, or faulty secretion;" the *fourth*, of "diseases which result from some growth foreign to the natural structure;" and the *fifth*, of Jaundice. There is an Appendix, which contains a good account of the "Liver-fluke" in Man, as well as in the Sheep and other graminivorous Animals.

### *Congestion of the Liver.*

The description given by our author of this morbid condition is lucid and instructive; as a matter of course, he has drawn largely, for his illustrations of the changes produced by its presence, from the admirable paper of Kiernan in the Philosophical Transactions. The most frequent cause of Hepatic Congestion is the existence of some obstruction to the free return of the venous blood to the right side of the Heart, in consequence of cardiac or pulmonary disease.

"It often happens," says Dr. Budd, "that in such persons, when the circulation is more than commonly impeded, the liver grows larger. Its edge can be felt two or three inches below the false ribs. If the circulation be relieved by bleeding, or by diuretics, or by rest, the liver returns to its former volume. This enlargement of the liver from congestion, often takes place, and again subsides, very rapidly, according to the varying conditions of the general circulation.

"In estimating the bulk of the liver, in congestion and other diseases, we must bear in mind, that its natural limits vary with posture and many other circumstances. It descends an inch or two lower when the person under examination is standing or sitting, than when he is lying down; it is lower after inspiration, than after expiration; and it may be pushed down by fluid in the cavity of the pleura, or by bloated, emphysematous lung." P. 41.

The complexion of patients labouring under Congestion of the liver, in-

duced by the cause now mentioned, is usually purplish with an admixture of dingy yellow: the blood is not only imperfectly decarbonised, but is also not completely freed from the principles of the biliary secretion. When the congestion continues for a considerable length of time, the proper secretory apparatus (the nucleated cells) of the liver seems to be more and more injured, until perhaps it is irretrievably damaged; and then the secretion of the bile ceases almost entirely to be effected. Several cases are related by Dr. Budd, "where, from the flow of bile having been long obstructed by the closure of the *ductus choledochus*, the liver had entirely lost its lobular appearance and contained no nucleated cells; so that, when a portion of it was examined under the microscope, nothing was seen but free oil-globules and irregular particles of greenish or yellow biliary matter." The same effect may probably arise from any serious lesion of the extreme vessels or biliary tubules; as, for example, in the hardened and granular state of the liver so frequent in drunkards, to which the appellation of *cirrhosis* has been applied.

Besides the mechanical and chronic causes of Congestion of the liver, to which we have alluded, this viscus is liable to become engorged from some of a more active and vital nature. In *ague* for example, the liver, like the spleen, is apt to be very much enlarged from sanguineous accumulation, during the continuance of the febrile paroxysm. In *purpura* also, and indeed in most diseases in which the blood is in a dissolved state, hepatic congestion is liable to occur. We need scarcely say that the nature of such congestions, as well as the proper method of relieving them, must be very different from that morbid condition which is induced by a stagnation of the blood in the parenchyma of the liver from organic disease of the heart and lungs.

From Congestion we pass on to Inflammation of the Liver. The character and features of this morbid condition vary very much, according to the exciting cause of the disease, the parts of the hepatic structure that are chiefly affected, and the nature of the patient's constitution. Dr. Budd arranges the inflammatory diseases of the liver under five heads:—1. *Suppurative* inflammation; 2. *Gangrenous* inflammation; 3. *Adhesive* inflammation; 4. Inflammation of the *veins;* and 5. Inflammation of the *gall-bladder* and *ducts*. It might be very easy to object to such a classification, which is founded, it will be observed, on two distinct principles—the *nature* of the morbid action, and its particular *locality* or seat. The only change, however, which we shall make, is to put the third species enumerated in the place of the first.

*Adhesive Inflammation of the Liver:*—or inflammation attended with the effusion of Coagulable Lymph. This effusion may be either on the surface, or in the parenchymatous substance, of the organ; but it is more particularly to the latter of these states that we wish to call the reader's attention. The following description of the effects of this lesion—so frequently induced by the use of spirituous liquors—deserves his notice:—

"Deep-seated adhesive inflammation of the liver produces different effects, according to the parts it principally involves. Sometimes the lymph is effused almost exclusively into the areolar tissue in the portal canals of considerable size,

and if the person die long after this has occurred, all the considerable branches of the portal vein are found surrounded, in some places to a distance perhaps of half an inch, by new fibrous tissue, which by its contraction has drawn in and puckered the adjacent portions of liver. The remaining portions of liver may be little, if at all, altered in texture, and may be readily scraped away from these indurated portions. The main branches of the vein are pervious, but many of the small twigs that spring from them are obliterated. The parts which these twigs supplied are atrophied, and the liver proportionally reduced in bulk. Where such portions are near the surface, the capsule is somewhat drawn in and puckered. Together with these changes, there are usually, if not always, thick false membranes on the capsule of the liver, or extensive adhesion, by means of old tissue, between the liver and adjacent organs. Usually, too, there are old false membranes on the surface of the spleen, and marks of adhesive inflammation of other parts, especially the pericardium and the pleura.

"I have several times met with this form of disease in persons who had drunk hard of spirits. It comes on with well-marked symptoms of inflammation of the liver,—pain in the side, vomiting, fever, and perhaps jaundice. These symptoms subside after a time, but the patient does not regain his former health. The liver has been permanently damaged; part of its secreting substance becomes atrophied from closure of the small portal veins, and it is no longer adequate to its office. The patient has difficult digestion, looks sallow, and does not recover his former strength." P. 108.

The deposition of Lymph or fibrous tissue around the smaller branches of the vena portæ, that separate the lobules of the liver from each other, renders its parenchymatous substance much tougher and more indurated than in health. When we make a slice of it, we observe thin fibrous lines interposed between small irregular masses of the lobules. At those parts on the surface of the viscus, which correspond to these lines, its investing capsular membrane is puckered or drawn in; producing that "hob-nailed" appearance that has been of late so much spoken of.

"The tissue of the liver is paler than natural, from the presence of this white fibrous tissue, and from its containing but a small quantity of blood; and it is often yellowish from accumulation of biliary matter in the cells. When this is the case, a section has the greyish and yellow colour of impure bees-wax, and, in consequence, the disease has been called by the French, *cirrhosis*—from κιρρος, yellowish.

"In other cases again, the quantity of this adventitious fibrous tissue is much greater, and by its contraction the lobular substance of the liver is drawn into round nodules, which being of a deep yellow colour from accumulation of biliary matter, are in strong contrast with the gray fibrous tissue between them.

"This state has been described by Abercrombie, who says, the yellow matter of cirrhosis is sometimes in small nodules, like peas, dispersed through the substance of the liver. He adds, 'A case is described by Clossey, in which the structure of the liver was wholly constituted of a congeries of little firm globules, like the vitellarium of a laying hen; it occurred in a boy of fifteen, who had immense ascites. In a case by Boismont, these nodules were as large as peas, and the liver was much diminished in size; the case was chronic with ascites. The French writers have a controversy whether the cirrhosis or yellow degeneration of the liver be a new formation, or a hypertrophia of the yellow substance, which they suppose to constitute a part of the structure of the liver in its healthy state. No good can arise from such discussions, as it is impossible to decide them.' (Diseases of the Stomach, &c., 2d edition, p. 369.") P. 109.

In the early stage of Cirrhosis, (the *gin-drinkers' liver* of English writers) the size of the viscus is usually enlarged, in consequence of the deposition

of serum and lymph throughout its substance. The thinner and more watery part of the effusion is, however, gradually absorbed in time, the fibrine contracts, the small twigs of the portal veins, and their accompanying biliary tubules, are compressed by the new tissue, and the lobular substance of the liver, receiving less blood than it should do, wastes. On all these accounts the liver diminishes in size; and in protracted cases, from the small quantity of blood it contains, and the great atrophy of the lobular substance, it is usually very much smaller than in health.

As, in Hepatitis arising from the excessive use of ardent spirits, the physical and material cause of the inflammation is conveyed directly by the portal vein to the parenchyma of the liver, we are at once prepared to expect that the morbid change should be most conspicuous in it: the capsule or investing membrane is only secondarily affected.* Even in some cases of "hob-nail" liver, the peritoneal coat remains sound, and the *tunica propria* is so little, if at all altered, that it may be readily detached and stripped off. But this exemption from morbid change is certainly not very common.

Associated with Cirrhosis of the Liver, we not unfrequently find more or less serious organic Disease of the Heart. M. Becquerel—in an elaborate paper upon the subject, published in the Archives Generales for 1840—states that the heart was diseased in twenty-one out of forty-two cases of Cirrhosis, of which he has given an analysis: he is of opinion that in these cases, the heart was diseased before the liver. We think that Dr. Budd is quite justified in withholding his assent to this position, and in maintaining that "obstructed circulation through the chest has no *direct* influence in causing the disease (cirrhosis,) and that it contributes to it only by giving greater effect to the influence of alcohol and other efficient causes."

The pernicious influence of spirit-drinking in inducing liver-disease, is much promoted by exposure to the vicissitudes of the weather—the prolific cause of so many insidious inflammatory affections among the lower classes—by a residence in a hot climate, and by whatever is calculated to disturb the healthy function of the chylopoietic organs, and to vitiate the products of digestion. In a good many of the published cases of Cirrhosis, organic affection of the stomach was present.

It is scarcely necessary here to allude to the *symptoms* of Adhesive Inflammation of the Liver, and of its consequences; more especially as they vary so much according to the acuteness of the attack, and the stage or period of its existence. The presence of pain and tenderness over the region of the liver, in a spirit-drinker, should always be viewed with suspicion, and carefully watched. When the organ has become seriously diseased, the complexion is always more or less jaundiced, and the skin is dry and rough. There is moreover in the majority of cases a tendency to Ascites, and not unfrequently also to various Hæmorrhagic phenomena,

* Dr. Percy of Birmingham has stated in his prize Essay, published a few years ago, that in dogs poisoned by alcohol, he could recover the spirit from the blood, the brain, and various other organs, but in greatest quantity from the liver.

as bleeding from the nose or rectum (piles are not unfrequent), the appearance of purpuric spots on the surface, and so forth.* There is a circumstance connected with the dropsical effusion arising from this cause that deserves our notice, viz.: that the Ascites very often exists alone and without œdema of the legs or of any other part: and that, when there is such œdema present, it almost always takes place subsequent to the Ascites. The cause is obvious; it is the Portal circulation which is at first chiefly, and perhaps only, affected.

*Treatment.*—In the early stage of the disease, when there is pain and tenderness in the hepatic region, *cupping* over this part, and the use of saline medicines, with low diet, are in general the best remedies. General bloodletting is seldom admissible in hard drinkers: delirium tremens is apt to occur after the loss of much blood. When bleeding is not required, or is not deemed safe, the application of a *blister* will generally afford decided relief. Dr. Budd says that, when the fever has abated, and the liver is still very large, *mercury*, and the *iodide of potassium*, are the medicines from which most benefit may be expected. We would not wait for the abatement of the fever, before we gave the former, at least, of these most potent remedies. A couple of grains of *calomel*, or three or four of—that excellent preparation—the *hydrargyrum cum cretâ*, either alone, or in combination with the *extract of colchicum*, may be administered night and morning, from the very first setting in of the hepatic uneasiness. Subsequently the *Plummer's pill* is a most valuable alterative. When ascites has supervened, we must avoid all lowering treatment. Hydragogue cathartics exhaust the strength, without materially diminishing the dropsical effusion; and surely long courses of mercury can do little or no good, when the parenchymatous structure of the Liver is deeply and permanently altered. An occasional warm or tepid bath is always grateful to the patient's feelings, and will often serve to promote the urinary, as well as the cutaneous excretion. Mild diuretics, with small doses of the *iodide of potassium*, are sometimes very useful; at least, temporarily so.

### *Suppurative Inflammation of the Liver.*

The causes of this serious lesion are various.

1. It may follow a blow or other mechanical injury on the side. Andral has related a case of this sort: but the occurrence is certainly very rare.

2. A far more frequent cause of Abscess of the Liver is suppurative inflammation of some vein, and the consequent contamination of the blood with pus. It is well known that what have been (not very correctly) called "metastatic abscesses" are apt to occur after injuries, surgical operations, &c., in various internal organs. Of these the Liver is one, in which they very frequently occur—more frequently indeed in it than in any other,

* Another symptom is an enlarged or varicose state of the veins on the *surface* of the abdomen—arising from the impediment to the free return of the blood along the deep-seated vessels. This symptom is often observed in different organic diseases of the abdominal viscera.

the Lungs alone excepted. Dr. Budd discusses with much clearness the general question as to the formation of those abscesses; and he comes to the conclusion, that their immediate cause is the presence of some irritating substance conveyed to the affected parts by the blood, and that in most instances the irritating substance is Pus, derived from the inflammation of the inner surface of a vein. "The globules of the purulent matter, mingled with the blood, are conveyed to the capillary vessels of the lungs, and, it would seem, by becoming mechanically arrested there, excite each circumscribed inflammation and abscess. If any of the globules pass through the capillaries of the lungs to the left side of the heart, they are sent in the arterial current to other organs, and becoming arrested in the capillaries of these organs, excite, as in the lungs, inflammation of limited extent, rapidly passing on to abscess."

It has been long well known to surgeons that Injuries of the Head are often followed by abscesses of the Liver. No rational explanation of the fact could be given, until of late years.

"From the researches of Mr. Arnott in this country, and of MM. Dance and Cruveilhier in France, no doubt remains that the abscesses in such cases result from suppurative inflammation of a vein, either in the soft parts, or between the tables of the skull.

"Many false theories of the mode of formation of the abscesses of the liver, consequent on injuries of the head, have been maintained under the erroneous impression that abscesses exist in the liver only. It was, however, long ago remarked by Morgagni, that, in these cases, there are often abscesses in the lungs, heart, spleen, and other organs, as well as in the liver. The abscesses in the liver attracted more attention than those in the lungs, on account, perhaps, of their larger size, and their being more conspicuous from the stronger contrast between the colour of pus and the natural colour of the organ." P. 53.

In the cases to which we have hitherto alluded, the *peccant* cause must have passed through the capillaries of the lungs, before it had reached any other organ; and hence it is that these metastatic abscesses are so much more frequent in the lungs than in the other viscera of the body. But, if the seat of the suppurative Phlebitis happen to be one of the veins that go to form the Vena Portæ, the pus, it is obvious, will be carried first to the Liver, before it be conveyed elsewhere; and then the abscesses will be found alone, or in greatest number, in that organ. The results of several experiments on animals have served to illustrate this important point in pathology. For example, Cruveilhier found that, if mercury be injected into one of the mesenteric veins, it will be all stopped in its course through the the Liver, and will cause circumscribed abscesses throughout its substance, just in the same manner as it does in the Lungs when it has been injected into the crural vein. Now the same result is apt to follow in the human subject, when any of the mesenteric veins become inflamed; as they will sometimes do after operations upon the Rectum. or for strangulated Hernia. Dance has related several such cases; and in these, as well as in the instances related by M. Cruveilhier, it is especially worthy of notice, that no abscesses were found in any other viscus or organ; all the pus, furnished by the inflamed veins, thus appearing to be stopped in its passage through the Liver.

Keeping these things in view, we are not surprised to find that Dr. Budd

is inclined to believe that "by far the most frequent cause" of Abscess of the Liver is ulceration of some part of the alimentary canal, or of the gall-bladder or ducts—the veins of which parts all go to the portal system. Of 29 cases recorded by Annesley, there was Dysentery and ulceration of the large intestine in no fewer than 21; and, in two others, the gut exhibited traces of a former lesion. Again, out of thirteen cases observed by Dr. Budd in the Seaman's Hospital, on board the Dreadnought, ulcers were found in the large intestine or stomach, in nine.* That there is an intimate connexion between the intestinal lesion in Dysentery and the formation of Abscesses in the liver cannot be fairly questioned, although the accurate Abercrombie seems to regard the co-existence of these diseases as accidental.—(*Dis. of the Stomach, &c.*, 2nd ed. p. 266.) Annesley, while admitting that Hepatic Abscess is in a good many cases connected with previous Dysentery, very candidly confesses that he is unable to point out any definite or established relation between the two maladies. In some cases, the Dysentery seems to be the direct consequence of the disease of the Liver, while, in others, the Hepatic and Intestinal diseases seem to be so nearly coeval, that it is impossible to say which existed first. Dr. Budd seems inclined to push his generalisations a little further; for we find him not hesitating to declare his opinion, that "in all the cases, or most of the cases, in which abscess of the liver and dysentery are associated, the former disease is the consequence of the latter." The data, which we as yet possess, scarcely warrant this opinion in its full extent. The *modus operandi* of the one disease in inducing the other is thus simply and clearly explained by our author:—

"Admitting dysentery, or ulceration of the bowels, to be a source of abscess of the liver, it is obvious that the liver does not become involved by spreading of the inflammation, but by some contamination of the portal blood.

"This may be either by *pus*, formed by suppurative inflammation of one of the small intestinal veins; or by matter of other kind resulting from softening of the tissues; or by the fetid gaseous and liquid contents of the large intestine in dysentery, which must be absorbed and conveyed immediately to the liver. It seems probable, that contamination of the first kind usually gives rise to small scattered abscesses; of the last, to diffuse inflammation, and a larger, perhaps single, collection of pus. If the morbid matter be such that it does not mix readily with the blood—as globules of pus or mercury—it will cause small, circumscribed abscesses, the rest of the liver being healthy. If, on the contrary, the morbid matter be readily diffusible in the blood, all the blood will be vitiated, and diffuse inflammation result." P. 64.

Ulceration of the Stomach is not unfrequently accompanied with the formation of Abscess in the Liver. The subject of the connexion between these two morbid states has not hitherto met with that attention from

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* We may refer to Welb's *Pathologia Indica*—of which there is an ample review in the last number of this Journal—as affording additional testimony on this point. The author gives a tabular view—drawn up by Mr. Geddes of Madras—of 28 cases of Hepatic Abscess; in 19 of these, either Dysentery, or something very much like it, seems to have been present.

pathologists which it deserves;* but the cases, adduced by Dr. Budd, are quite sufficient to convince every one of the important fact, that organic disease of the stomach is liable to be attended with suppurative disease of the hepatic parenchyma. Nearly the same thing may be said of Ulceration of the Gall-bladder or ducts. On this point we find the following instructive remarks :—

"The ducts, the gall-bladder, and the capsule of the liver, are nourished by the hepatic artery, and blood flows, not from the portal vein to them, but from them to the portal vein. This circumstance explains how ulceration of the gall-bladder, like ulceration of the stomach or intestines, may cause abscess of the liver; and it also explains the fact, noticed by many physicians who have written on abscess of the liver, that in this disease the gall-bladder, the large ducts, and the capsule, are seldom involved. The suppurative inflammation is confined to those parts of the liver that receive blood from the portal vein. The frequent absence of every trace of inflammation of the capsule in cases of abscess of the liver has been expressly noticed by Annesley and by Dr. Stokes, as very important in reference to treatment." P. 69.

The facts, which we have quoted, will suffice, we think, to prove the important pathological position, that the formation of Hepatic abscesses is very frequently associated with the existence of ulceration in some one part of the alimentary canal; but it must not be forgotten, that there are certain *kinds* of this intestinal lesion which are very rarely, if ever, attended with any decided change in the substance of the liver. Thus, it is very rare in cases of Typhoid Fever, or of Phthisis—in both of which diseases, ulceration of the bowels is so commonly met with; nor was it found to be present in any of the ten cases of ulceration of the duodenum after Burns, related by Mr. Curling in his paper in the Medico-Chirurgical Transactions for 1842; (vide the No. of this Journal for January, 1843.) The converse, too, of the proposition is equally true; viz., that Abscess of the Liver may exist—more especially in tropical climates—without any co-existing ulceration of the bowels. Our author, indeed, seems rather unwilling to admit this fact, and he is every now and then suggesting that there may have been a contemporaneous lesion of the intestines even in those cases where it has not been observed. He is no doubt quite correct in asserting that the Hepatic congestion, which arises from an impediment to the free return of the venous blood in consequence of some pulmonic or cardiac disease, seldom, if ever, produces suppurative inflammation; nor is this morbid state at all a common result of spirit-drinking, as has been alleged by some writers; but the accuracy of the opinion, put forth in the following extract, may, we think, be very fairly questioned. After stating that, in India, great influence is attributed to the mere heat of the climate in causing inflammation and abscess of the Liver, he goes on to say:—

* It is but justice to Broussais to remark, that it was he who first pointed out, or at least insisted upon, the intimate dependence of Hepatic disease upon gastro-enteric irritation. Dr. Stokes has treated this important subject with his accustomed ability in his valuable essays upon Gastro-Enteritis and Hepatitis in the Cyclopædia of Practical Medicine.

"Another cause, brought forward to explain the frequency of abscess of the liver in India, is remittent or intermittent fever, or, more correctly, the malaria that produces these fevers. It seems established, that in some of these fevers, the liver, like the spleen, becomes congested, and much enlarged in consequence; and in yellow fever and the severe forms of remittent fever, it is much and permanently damaged in its secreting element. Yet it may be doubted whether suppurative inflammation of the liver takes place in these cases without ulceration of the stomach, or gall-bladder, or intestines, which so often occurs in some climates in the course of the severe forms of marsh fever." P. 73.

In a subsequent passage, however, he remarks:—

"It may be, however, that in some parts of India, a peculiar malaria, favoured perhaps by the heat of the climate, produces abscess of the liver independently of ulceration of any part of the mucous surface that returns its blood to the portal vein. We know that marsh-fevers differ very much in type, and damage different organs in different seasons and climates; and even according to different degrees of concentration, merely, of the poison by which they are produced." P. 73.

Abscesses of the Liver sometimes attain an immense size. In a case observed by Dr. Budd, the quantity of purulent matter was estimated at two quarts; in one related by Annesley, there were not less than 90 ozs.; and Dr. Inman, of Liverpool, has sent to our author the account of one still more extraordinary, in which the quantity of matter was found by measurement to be 13 pints. The abscess, it is well known, may burst either outwardly, or inwardly into the lung or pleura, or into an intestine, or into the cavity of the abdomen.*

With respect to the *symptoms* of Suppurative inflammation of the Liver, it is quite unnecessary to make many remarks. They are very obscure in not a few cases, and the lesion is often discovered only after death, without perhaps having been ever suspected during the life of the patient. There may be no pain in the side or shoulder, no vomiting, nor yet any appearance of Jaundiced discolouration. Andral, Abercrombie, &c., have noticed this, not unfrequent, absence of any characteristic symptoms; and Annesley, one of the highest authorities that can be quoted, expressly says: "The formation of matter (in the liver) may commence and terminate without the appearance of any of those signs on which the inexperienced are taught to rely." This experienced writer has made a remark respecting the *pain in the right shoulder*, (which is usually regarded as characteristic of liver-disease,) that deserves notice. According to his experience, the presence of this symptom uniformly indicates that the disease is seated in the *right* lobe of the liver. There is good reason to believe also, that the pain is always much more uniform and decided, when the

* "It has been supposed," says Dr. Budd, "by some medical men in India, that the pus in an abscess of the liver may be absorbed and eliminated, *as pus*, in the urine. But this notion is evidently erroneous. Pus-globules from their large size, cannot directly enter the blood-vessels or escape from them. The matter in the urine, supposed to be pus, was probably a deposite of phosphates. During the severe constitutional disorder that attends purulent phlebitis, there is often a sediment of this kind in the urine,—having to the naked eye much the appearance of pus, but under the microscope, showing, instead of pus-globules, beautiful phosphatic crystals."

convex surface, that when other parts, of the viscus are affected. MM. Louis and Andral have not hesitated to declare it as their opinion, that pain in the right shoulder is not a frequent symptom of hepatic disease; although far from being constant, it is nevertheless present in a sufficiently large proportion of cases, to entitle it to a place among the diagnostic signs. The former of these gentlemen has gone so far as to express his belief that the *vomiting* and *cough*, that are frequent attendants upon diseases of the Liver, are dependent, the first upon a *gastrite*, and the latter upon a *bronchite:* such statements are at utter variance with the experience of the most practical and trustworthy writers upon the subject. The tension or *rigidity of the right rectus muscle*—a symptom first insisted upon by the late Mr. Twining—is found to exist in other diseases of the liver, besides suppurative inflammation: it is one of those signs that should always be sought for by the physician. Symptoms may sometimes be derived from the operation or effects of medicines; and in this way the diagnosis of a disease may, in some degree at least, be determined. If, for example, a pain yields to steel or bark, we suspect that it was truly neuralgic; if to alkalis and colchicum, we presume that it was of a gouty nature; and if to bloodletting and purgatives, we have fair reason to believe that it was congestive or inflammatory. Now there is something, in reference to the action of Mercury in Hepatic inflammation, that well deserves the notice of the practical physician. It has been found by all the most experienced observers that the preparations of this mineral almost invariably fail of producing its accustomed constitutional effects, when suppuration has once taken place. Annesley says: "There can be no doubt that the system will not be brought under the full operation of Mercury, or that ptyalism will not follow upon the most energetic employment of this substance, where abscess exists." He repeats this opinion again and again, and even considers resistance to the action of Mercury as a proof that abscess has formed in the liver. It may be laid down as an invariable rule, that this mineral should never be administered (except indeed for the relief of an occasional symptom) when there is reason to suspect that suppuration has taken place: it can then do no possible good, and will only serve to exhaust the patient's strength, and exasperate, by its depressing influence, the local malady.

Passing over Section IV., which treats of *Adhesive and Suppurative Inflammation of the Portal and Hepatic Veins*, we come to the following one, which it will be observed, from the heading affixed to it, contains a variety of matter:—

"*Inflammation of the gall-bladder and ducts—Catarrhal and suppurative inflammation—Croupal, or plastic, inflammation—Ulcerative inflammation—Effects of ulceration of the gall-bladder and ducts—Effects of permanent closure of the cystic and common ducts—Fatty degeneration of the coats of the gall-bladder.*"

Marks of Inflammation and other disease are much more common in the gall-bladder, and in the cystic and common biliary ducts, than in the hepatic ducts. The following case from Andral's Clinique (t. iv. p. 499) is regarded by our author as an example of acute inflammation of the common duct:—

"In the summer of 1824, a man, about 30 years of age, felt severe pain in the right hypochondrium for two days, and then became jaundiced. When he entered the hospital, the jaundice and the pain were still present; and immediately below the cartilages of the false ribs, was a moveable, pear-shaped tumour, which Andral took for a distended gall-bladder. The pulse was quick, the skin hot, the bowels obstinately bound. (Twenty leeches to the anus; enemata; foot-baths; barley-water.) The next day, the fever ceased. During the three following days, the tumour grew less, and then disappeared together with the pain. The jaundice went off, the constipation ceased, and the patient soon left the hospital well." P. 158.

The symptoms of such an affection may reasonably be supposed to be pain in the situation of the duct, followed, at the end of two or three days, by jaundice and distention of the gall-bladder; fever; constipation, and probably nausea and vomiting. The case may readily be mistaken for one of inflammatory jaundice; but our diagnosis will be materially assisted by the circumstance of the pain being limited to a small spot in the situation of the common duct, and by *the early appearance of a large, moveable pear-shaped tumour*, produced by the projection of the distended gall-bladder. If this tumour be very painful and tender, we may suspect that the gall-bladder itself is inflamed. Dr. Graves, in his recent work on Clinical Medicine, has related a well-marked example of plastic or croupal inflammation of this organ. In a young woman, who died with the symptoms of decided Jaundice (there was no pain in any part except *at a point between the right hypochondrium and epigastrium, greatly increased by pressure*,) the following appearances were found on dissection. The substance of the liver itself exhibited nothing decidedly abnormal; but "the gall-bladder was distended, and, on being opened, was found completely filled by a dark green mass of a tenacious viscid nature, apparently lymph. This substance was of the same pyriform shape as the gall-bladder, and terminated by its narrow extremity at the commencement of the gall-duct. On its removal, the lining membrane of the gall-bladder presented a bright scarlet colour and villous appearance, and the natural and beautiful 'honey-comb' arrangement of the mucous membrane was completely effaced. There was no softening or ulceration of the membrane, nor was the colour different in any part. It resembled very much the appearance of the mucous membrane in acute laryngitis. The walls of the gall-bladder were much thickened. There was no obstruction in the ductus choledochus, the cystic or hepatic ducts, and their lining membrane was quite free from any unusual vascularity; the duodenum and stomach were stained with the colouring matter of the bile, but in other respects were healthy; no gall-stones or other obstruction; the kidneys were natural."

A frequent cause of Inflammation of the Gall-bladder, and of the cystic and common ducts, is the mechanical irritation of gall-stones. On the other hand, the thickening of their parietes and the consequent contraction of these ducts must necessarily impede the free exit of the bile, and thus tend to favour the formation of these productions.

*Ulceration of the Gall-bladder* is not unfrequently met with in patients who have died of remittent fever. Sir G. Blane has noticed this appearance in his account of the Walcheren fever; and Mr. Boyle, in his description of the Sierra Leone fever, says "there were, in almost all cases,

traces of inflammation in the pyloric extremity of the stomach, extending thence along the duodenum to the entrance of the gall duct, about which, for the space of a Spanish dollar, the inflammation seemed to have attained the greatest height. The duct was ordinarily choked by dark-coloured, viscid bile."

In this country, ulceration of the gall-bladder is perhaps most frequently connected with the presence of gall-stones; but a more common result of the presence of these substances is *closure of the cystic*, or even of the *common biliary duct*. The former of these lesions may exist without any necessary symptoms of hepatic disorder; the latter, as a matter of course, invariably induces incurable jaundice, and eventually certain death. When the obstruction of the common duct takes place gradually, the gall-bladder and duct sometimes acquire an enormous size. Abercrombie cites from Boismont a case in which the hepatic gall-ducts became so distended, and the lobular substance of the liver was so wasted at the same time, that this viscus had the appearance of a large undulating cyst.

The change in the parenchymatous substance, under such circumstances, is very remarkable. The proper nucleated cells of the liver, which serve to secrete the bile, are damaged or totally destroyed, the capillary vessels waste, and the whole organ in consequence shrinks and no longer presents any appearance of distinct lobules. Dr Thomas Williams has given an interesting account of these changes in his most valuable paper "On the Pathology of Cells" in Guy's Hospital Reports. (The reader will find an analysis of this paper in the Number of the Medico-Chirurgical Review for January, 1844.) According to this gentleman's observations, the nucleated hepatic cells entirely disappear; and nothing more than minute free fatty particles, and equally free, floating, amorphous granular matter are anywhere discoverable. In a case carefully examined by Dr. Budd, the appearances of the lobular substance entirely coincided with those so faithfully described by Dr. Williams; the liver being entirely "made up of vessels and the areolar tissue connecting them, with free oil-globules and solid particles of yellow and orange biliary matter that were left when the watery and more soluble parts of the retained bile had been absorbed." In these cases of closure of the common duct, there is sometimes present (what we should at first not expect) a voracious appetite—arising most probably, as in Diabetes, from the imperfect digestion of the food. Hæmatemesis is a not unfrequent symptom of this, as well as some other, forms of chronic Hepatic disease: the cause is obvious; the circulation through the portal vein is more or less impeded, and there is consequently a back pressure upon the current of blood in the gastric and mesenteric veins.

In some, but certainly not in all, cases of obstructed excretion of the bile, the Brain suffers; and delirium, or coma and convulsions, precede the fatal issue. But such cases do not invariably prove fatal, at least for a very considerable period of time. Patients have been known to survive for several years in a jaundiced state, when there was reason to believe that the *ductus choledochus* had become closed, and the parenchyma of the liver was in a great measure atrophied at the same time. It is from such instances as these, where not only the *excretion*, but the *secretion* also, of the bile must have been suspended for a lengthened period, that it has been

reasonably inferred that the Hepatic functions are not invariably and absolutely necessary to life.

"The destruction of the secreting element of the liver proves fatal, however, in the end, by impairing nutrition and causing gradual but progressive wasting." The prolongation of life, under such circumstances, will depend much on the healthiness of the other chylopoietic viscera, the nature of the food taken, the state of the respiratory and cutaneous functions, the condition of the bowels and so forth. The steady use of ox-gall, in the form of pills, after each meal, may serve very materially as a substitute for the natural secretion; and frequent tepid bathing of the surface will always conduce to the comfort of the patient.

There is a very dangerous form of *Jaundice, depending*, it would seem, *upon a sudden suppression of the biliary secretion*, and accompanied with symptoms of alarming cerebral disorder. Dr. Alison published two well-marked cases of this formidable disease in the Edin. Med. and Surgical Journal for 1835. The following heading of the first case gives a brief summary of its chief features:—

"*Occasional complaint of pain and heat in the abdomen, with thirst and chilliness, for seven weeks; then jaundice, followed at the end of two days by delirium—No tenderness of abdomen, or fever—Occasional singultus—Stools bilious—Coma—Purpuric spots on the skin—Denth ten days from the occurrence of jaundice—Liver of a light yellow, smaller than natural, flabby—Mucous membrane of the ducts unnaturally white.*"

Dr. Bright also has related two cases of the kind in Guy's Hospital Reports. The first is headed thus:—

"*Abdominal pain—Jaundice—tenderness of the epigastrium—Occasional sickness—Three weeks after the appearance of jaundice, indistinct utterance, and loss of power in the left hand—soon followed by coma and death—Liver very small, soft or flaccid, and of a reddish-yellow colour—No marks of inflammation on the capsule or in the ducts, which were not even stained with bile—Brain congested.*"

Rokitansky enumerates the following signs or features as characteristic of this affection. "It is distinguished, during life, by its acute course,—extreme pain of the liver (by no means a constant or even a very frequent symptom,)—nervous symptoms and jaundice—and, finally, a fatal issue amid fever, symptoms of blood-poisoning, irritation of the brain, and its membranes, hydrocephalic softening of the brain, exsudation and softening processes generally, and especially of the mucous membranes, pneumonia, &c. The blood in the larger vessels of the liver is thin, fluid, of a dirty red-brown colour."

Unquestionably many of the symptoms may be fairly attributed to a poisoning or contamination of the blood from the non-elimination of the principles that are discharged, in the healthy state, by the liver. Dr. Budd appears to be of opinion, that the proximate cause of this malady is a serious lesion or destruction of the proper hepatic nucleated cells; but this can be regarded as merely a conjecture. The attack, in some cases at least, has more of the characters of a fever, accompanied with a peculiar disturbance—a sort of acute paralysis, if we may use such an expression, —of the biliary functions, and subsequently with symptoms of alarming head-affection, than of a disease dependent upon any organic lesion or change of the hepatic structure. Whatever view we may take of this

pathological question, the important practical point cannot be too strongly urged upon the attention of all medical men, that the supervention of excessive drowsiness, or of any other symptom indicative of cerebral oppression or irritation, in a case of acute Jaundice, must always be viewed with great suspicion, and as requiring most prompt and energetic treatment. Active purgatives, accompanied in some cases with the detraction of blood, are the principal remedies.

Among the various causes that are liable to give rise to Jaundice, arising from a suppressed secretion of the bile, may be enumerated, deep grief, or any violent mental emotion, the bite of serpents and poisonous insects, the miasm of certain fevers, the noxious products of depraved digestion, and certain vegetable or mineral poisons. In some cases, it is scarcely possible to discover any probable cause. Abercrombie has related an interesting case, in which there was a sudden occurrence of deep jaundice, accompanied subsequently with frequent vomiting of black matter, and great prostration, so that the patient sunk after an illness of three weeks, but without any symptoms of head-affection having made their appearance. On dissection, the liver was much diminished in size, of an almost black colour, and soft and disorganised throughout, like a mass of coagulated blood. The gall-bladder was empty and collapsed. Dr. A. calls it a case of "*black ramollissement of the liver.*" This state is unquestionably not the result of any inflammatory action; it is more allied to Gangrene.

That the liver sometimes, although rarely, becomes the seat of *gangrene* is now admitted by all pathologists. Rokitansky says that he has, on several occasions, observed Gangrene of the Liver, in *connection with gangrene of the lungs;* but that he has never found it without gangrene of some other part. Our author relates a most interesting case—which accords with, and confirms, this remark of the Austrian pathologist—of what may be called "gangrenous infection." It occurred in the practice of Mr. Busk on board the Dreadnought, and is headed thus:—

"*Mortification of the toes from cold—Removal of the dead parts—Severe rigors followed by typhoid systems—Death on the sixth day—Gangrene of the liver, the lung, and the spleen; Necrosis of the thyroid cartilage; Ulceration of the pharynx; pus in the shoulder-joint.*"

The comments, appended by our author to the report of the case, are so interesting that we have great pleasure in submitting them to the reader's attentive perusal.

"In this case, the existence of gangrene, both in the liver, and in the lung, was clearly shown by the defined line surrounding the gangrenous portions.

"The source of the mischief here was, no doubt, the gangrene of the toes produced by cold. The man was in the prime of life, of spare habit, muscular, florid, and in good health at the time of the frost-bite. The case shows us what a serious thing a small patch of gangrene in any part of the body may become.

"The dissemination of the gangrenous masses—the existence of a number of them *isolated and at a distance from one another*—proves that the septic agency was conveyed by the blood. The noxious matter thus disseminated destroyed the vitality of the tissues on which it acted most strongly.

"The chemical theory of these septic changes is now well known. All parts in which they are taking place, have a tendency to affect other parts brought into contact with them, with the same mode of transformation. The case just related, —and it is by no means a solitary one,—offers one of the most interesting illus-

trations of this theory in the whole range of pathology. But, whatever be the explanation adopted, the fact is certain, and it is one of extreme importance, that gangrene of the extremities, or of any part of the surface of the body, produced by cold, by pressure, or in any other way, has a tendency to infect other and remote parts of the body with the same change.

"The occasional occurrence of gangrene in remote parts of the body in low fevers, after sloughing of the skin of some one part has been caused by pressure, was particularly noticed by Dr. Graves, in his remarks on an interesting case in which gangrene of the lung was consequent on sloughing of the sacrum from pressure." P. 102.

The second Section of the Chapter, upon which we are at present engaged, is devoted to the consideration of *Fatty degeneration of the liver—partial deposit of fat in its substance—waxy liver—and the appearances caused by deficiency of fat in the liver.*

It is to Mr. Bowman that we owe our most correct knowledge of the true nature of the first of these morbid states. According to this accurate observer, the greater portion of the superabundant fatty matter, present in the hepatic parenchyma, exists in the form of oil-globules within the proper nucleated cells of the affected organ. Even in the healthy state, these cells always contain some oil-globules; but, in this disease, the number and size of these is enormously increased. The accumulation of fatty matter is sometimes so great, that more than one-half of the bulk of the entire viscus—which, moreover, is generally a good deal larger than natural—may consist of it. The tissue of such a liver is pale, and generally of a light buff colour throughout, dotted with brown or red, the dots indicating the centres of the lobules; it is moreover soft, and greases the hands or the scalpel like common fat. When the quantity of oil is less, the liver presents the peculiar appearance so well known as the "*nutmeg liver.*" It may not feel greasy; but that it contains an unusual quantity of fat may be at once detected, by placing a thin slice of it on a piece of paper, and exposing it to the action of heat; some of the oil or fat exudes, and greases the paper. But the best way of ascertaining the morbid change is to examine a small particle of the liver with a microscope. The early stage of *Cirrhosis*, it may be remarked, is apt to be mistaken for the true *nutmeg liver*, occasioned by the moderate deposition of fatty matter: a microscopic examination will suffice at once to distinguish these morbid states from each other. The functions of the viscus are sometimes very little, if at all, disturbed by the fatty degeneration of its structure; the only inconvenience perhaps experienced by the patient being the distension of the belly, and a sense of fulness and weight in turning in bed from one side to the other, in consequence of the increased bulk of the liver.

The *fatty liver* occurs in different states of the body. 1. Corpulent inactive persons, who live full and grossly, and drink freely of heavy malt liquors.* Magendie found that dogs, which were fed almost exclusively

* Such persons, if they wish to reduce their unwieldiness, should abstain not only from greasy food and fermented liquors, but also from the use of much sugar, potatoes, and other substances whose chemical composition is nearly equivalent. "As sugar," remarks our author, "furnishes a material for respira-

with oleaginous matters, as butter, lard, &c., died of inanition, although they became remarkably fat; in all, the liver was fatty. 2. In certain wasting diseases; but more especially—nay, almost peculiarly—in Phthisis. According to Louis, this change occurs in about one-third of phthisical patients: it is much more frequent in females than in males.* It is not very easy to account for its production. Some have supposed that, in consequence of the office of the lungs being gradually more and more interfered with, the elimination of the hydro-carbonaceous matters (of which fat is the most conspicuous) from the system is effected chiefly by some other organ, and that that organ is the Liver. But to this opinion it has been objected, that in Asthma and other diseases, in which the respiratory functions are very imperfectly performed, we never find the fatty liver; and, on the other hand, that this morbid change is occasionally met with, when the lungs are not at all affected. It has been found in persons who have died from Cancerous disease, from caries, from chronic dysentery,† and other wasting maladies.

The general inference, drawn by our author, from these and other facts, is, that "in the process of wasting, the fat stored up in the body is largely taken up by the veins, so that it comes to be in excess in the blood, and is then laid hold of by the hepatic cells, which have a natural affinity for it. Fat is, without doubt, secreted in large quantity by the Liver, and by the sebaceous glands, whenever a large quantity of it finds its way into the blood." According to this view, the fatty degeneration of the liver is essentially not more a disease of this viscus, than Diabetes is a disease of the kidneys: these organs only serving to eliminate certain matters already formed within the system.

The "waxy liver" seems to be only a variety of the fatty liver, and need not detain us; and the sole reference that we shall make to the following section on "Scrofulous Enlargement and other kindred states," is to extract the following passage on the *treatment* of such maladies.

"When the enlargement of the liver is consequent on scrofula, our chief reliance must be on warm clothing; sea-air and bathing; a light nourishing diet, comprising a liberal allowance of animal food and wine; and the preparations of iodine and iron, separate or combined.

"When the health has been broken by the combined effects of syphilis and mercury, warm clothing, a tonic regimen, iodide of potassium, nitric acid, sarsaparilla, and guaiacum, are the appropriate remedies.

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tion, which is soluble in the blood, it is acted on by oxygen much more readily than the insoluble fat, which is thus protected, and laid up in the system. Alcohol has a still stronger protecting power, for similar reasons."

Query—Does experience bear out this ingenious reasoning in reference to ardent spirits? Are those people, who are much given to their use, generally fat?

* There is often an accumulation of fat about the heart also, in Phthisis. This has been suspected to serve merely as a sort of compensation for the wasting of its muscular tissue; the heart requiring to have a certain amount of fulness and bulk, to admit of its cavities assuming the necessary changes of volume and position in the acts of systole and diastole.

† In persons, who have died of chronic Dysentery, we not unfrequently find that the *omentum* and *appendices epiploicæ* are unusually loaded with fat. Cruveilhier alludes to the frequent accumulation of fat about cancerous growths.

"In either case, the original malady is faulty assimilation, and, if we can remedy this, we shall probably, in most cases, if not in all, remedy the unnatural condition of the liver, and other secondary ailments.

"My own experience leads me to think highly of frictions with iodine ointment, long-continued, in such cases. I have several times seen an enlarged liver reduced to its natural volume by iodide of potassium and frictions with iodine, or, simply, by these frictions and saline purgatives. The matter deposited in the liver does not become organised, like the fibrine poured out in inflammation, and, if the general health mends, it may, in time, all pass off in the bile, or be removed by absorption." P. 254.

Dr. Graves has recorded, in his Clinical Medicine, several cases of enormously enlarged liver gradually subsiding under a course of treatment, persevered in, perhaps, from six months to two years.

The Section on *Gall-stones* is full of interesting matter. These substances are almost always formed at first by a portion of the bile becoming so inspissated as to become solid: around this, as a nucleus—which is usually of a dark olive or black colour—is deposited Cholesterine, mixed with variable quantities of the colouring matters of the bile. They are usually formed in the gall-bladder; but occasionally in the hepatic ducts. The latter variety is generally much darker and more irregular on its surface—in consequence of the absence of any investing deposit of Cholesterine—than the ordinary kind. Some gall-stones—especially those which are solitary—are composed almost entirely of this substance (cholesterine,) and are then nearly quite white, and of a crystalline appearance: they have a soapy feel, and burn in the flame of a candle with a bright flame. The number of gall-stones may vary from one to as many as two or three thousand.

"Gall-stones are very light, considering their size. When fresh from the gall-bladder, they usually sink, if placed in water. When they have been kept long, and are quite dry, most of them float, until they have imbibed a certain quantity of the water, when they sink slowly. Their specific gravity depends chiefly on the relative proportion of cholesterine and colouring matter. Cholesterine is lighter than water; the colouring matters of bile are heavier. The lightest gall-stones are therefore usually those which contain the largest proportion of cholesterine. The weight of gall-stones, especially when dry, will, of course, vary also with the character of their nuclei." P. 278.

Dr. Prout says that, when the passage of gall-stones is suspected, directions should be given to mix the fæces with water, on the surface of which the stones, if present, will be found floating. But this certainly will not always happen. "Dr. Watson has also recommended the adoption of this method of finding the stones, but he adds, 'I never but once succeeded in thus catching a concretion in the evacuations of a patient, whose symptoms had led me to search for it.'"

The formation of gall-stones appears to be much more frequent in women than in men; in consequence, probably, of their more inactive mode of life. Among men, it is chiefly among those whose pursuits are sedentary that they are met with: hence literary persons, prisoners, and bed-ridden invalids are most frequently the sufferers. Morgagni was of opinion that the causes of gall-stones are, in a great measure, the same as those of urinary calculi; and more recently, Dr. Prout has remarked that a tendency to the formation of gall-stones of cholesterine is frequently

associated with a tendency to lithic acid deposits in the urine. In some cases, indeed, the symptoms of the urinary disturbance are so predominant as to disguise altogether for a time those of the hepatic suffering, so that the true nature of the attack has been mistaken, until perhaps the evacuation of the gall-stones; after which the patient has speedily recovered.

The *symptoms of the passing of gall-stones* through the ducts into the duodenum are well described in the following passage:—

"They generally come on suddenly, two or three hours after eating, with severe pain, like that of colic, in the region of the gall-bladder. The pain is not equable. There is a constant, dull, aching pain, which every now and then is interrupted by a paroxysm so excruciating that the patient bends himself double, or rolls about the floor, at the same time pressing his hands firmly against the pit of the stomach, which sometimes eases the pain. These severe paroxysms produced great exhaustion: the pulse becomes slow or weak, the face pallid, and the whole body covered with a cold sweat.

"Together with these symptoms, there is distressing nausea, and frequent vomiting. The matters vomited are very acid, and, in all cases of repeated vomiting, while the common duct is not closed, are bitter.

"The severity of the symptoms, and the time they last, are of course very variable, depending on the number, and the form, and the size, of the stones that are passing, and on the previous state of the ducts. In some cases, the symptoms cease after an hour or two, or a still shorter time, and generally, *suddenly*, as the stone escapes into the duodenum,—and the complaint may be taken for mere hepatic colic. In other cases, where the stone is larger, or the passage is less free, or where many stones pass in succession, the symptoms may continue, with intervals of comparative ease, for several days." P. 288.

When the symptoms last long, the patient always becomes more or less jaundiced, and there is in many cases a marked tendency to the invasion of rigors, recurring at irregular intervals: the same thing is often observed in cases of Stricture of the Urethra, or when a renal Calculus descends along the ureter. Although the symptoms attending the passage of gall-stones are often most alarming, the case generally terminates favorably. Occasionally, however, it has proved fatal, either from the supervention of ileus, or from the rupture of the gall-bladder or ducts, and the consequent effusion of the bile into the abdominal cavity.

Chapter IV. is devoted to the consideration of *Cancer of the Liver*, and of *Hydatid Tumours*.

The first of these morbid growths is of much greater frequency than is commonly supposed. Our author says: "No serious organic disease of the Liver is, in this country—at least among people who have never drunk hard—so frequent as *Cancer*;" and Cruveilhier has observed—"of all the diseases of the liver, the most frequent and the most severe is, perhaps, the cancerous degeneration in the form of disseminated masses."

In the majority of cases, Cancer of the Liver is consequent upon the existence of cancer in some other part of the body, more especially in the stomach and mamma: in a few instances, indeed, the disease seems to be primarily developed in the hepatic parenchyma.

The greater liability of the liver than of any other organ (the lungs excepted) to be the seat of *disseminated cancer* as well as of *disseminated abscesses*, is chiefly attributable to the circumstance of the entire venous

blood of the stomach and intestines having to pass through its substance, and to the consequent risk of various abnormal matters being detained in its capillary vessels. The *cells* of Pus, of Cancer, and of other morbid degenerations, are thus apt to become arrested in their course; and the result of such arrest must be to give rise to *foci* of purulent, cancerous, or other disease in different parts of the Hepatic parenchyma. Such being the case, we are at once prepared to expect that, whenever the stomach or any portion of the intestinal canal is affected with Cancer, the liver, ere long, will become the depository of some of the morbid and morbific germs. It is seldom that a *single* or isolated cancerous growth is found in this viscus. Usually there are scattered through its substance a great number—often hundreds—of round cancerous tumors; some of them so small as to be distinguished with difficulty, others of the size of a bean, or a walnut, or even of an orange.

"Cancerous tumors in the liver, as in other parts, differ much in firmness, vascularity, and colour, in different cases. Sometimes the tumors are white and fibrous, or, as it is termed, *scirrhous;* but far more frequently, especially when numerous, they are soft, or *medullary*. Instances are now and then met with, in which, in the same liver, some tumours are hard, and others soft.

"Soft cancer presents the same varieties in the liver, as in other organs. Most commonly the cancerous mass contains but few vessels, and is pulpy and whitish, or of a greyish-white—presenting that striking resemblance to brain rather softened, which led Laennec to apply to it the term *encephaloid*. In other cases, the tumours are extremely vascular, presenting the appearance known as *fungus hematodes*. In others, again, they are *melanotic*. Indeed, every variety of cancer, except *gelatiniform*, or *colloid* cancer, has been met with in this organ.

"The colour of melanotic tumors of the liver varies, according to the quantity of pigment granules which they contain. In the same liver tumors may sometimes be found of every shade from light brown to black." P. 302.

A liver, which is the seat of numerous masses of Cancer, usually becomes very much enlarged, so that it may reach down considerably below the false ribs, and even down to the brim of the pelvis; and, as its surface is sometimes tuberculated with the cancerous growths, it may then be felt irregular and knobby on examination of the abdomen. In a few rare instances of the disease, the bulk of the viscus is diminished. In many cases of cancer of the liver, there is more or less of Ascitic effusion present; but the quantity of the effusion is very seldom so great as in *cirrhosis* of this organ. Not unfrequently the patient is jaundiced at the same time.

"The most significant symptom," (of cancer,) says our author, "is enlargement of the liver. When this comes on in the middle period of life, and especially when it is progressive, and when other conditions that may equally give rise to it, are wanting,—when there is no obstacle to the circulation in the chest, when the patient is not consumptive, and when his habits have not been such as to lead us to suspect that he may have cirrhosis,—it affords, of itself, strong presumption of the presence of cancerous tumors. When the liver is of very great size, and its surface can be felt to be nodulous or uneven, there is no longer room for doubt.

"Another symptom which is of very frequent occurrence, and which may help us to distinguish this disease from some others in which the liver is likewise enlarged, is constant pain and tenderness." 326.

Whenever there is good reason to suspect the cancerous nature of an enlargement of the Liver, we should very carefully avoid having recourse to large or repeated doses of *mercury:* they can do no possible good; and may rapidly exhaust the patient's strength, and aggravate, most probably, at the same time, the local malady.

*Hydatid tumours* are very frequently found in the Liver; indeed more so in this than in any other organ of the body. Their contents are usually transparent and limpid as water;* but, in some cases, the sac or cyst is filled with a thick matter, having the appearance of glazier's putty or plaster, mixed with fragments of dead hydatids. This matter is found to consist of phosphate of lime, with perhaps the addition of a little carbonate, and an albuminous substance. When there is an Hydatid tumour in the liver, there are frequently similar tumours at the same time either in the Lungs, in the Spleen, or in some part of the Mesentery. In some cases, thousands of hydatids have been found in the abdomen, under the peritoneum, and between the folds of the mesentery. It is often difficult to determine in what part or organ the primary and parent tumour was formed. Dr. Budd seems to regard the Liver as generally the "point de depart;" for he says:—

"The constancy with which hydatid tumors in the liver are associated in one case with hydatid tumors in the lungs only; in another, with hydatid tumors in the spleen, or in the mesentery only, strongly favours the supposition, that a tumor of the liver may, by the escape of germs into a branch of the hepatic or of the portal vein, or into one of the lymphatics, lead to secondary tumors in the lungs, or in the liver itself, or between the folds of mesentery. In such cases, too, there is generally one tumor in the liver, which, from its greater size, from the greater thickness of its coats, and from other marks of age, looks like the parent of the rest. In a large proportion of such cases, this patriarchal-looking tumor presents ulceration, or other marks of disease, on the inner surface of the sac."—354.

There is the objection however to this hypothesis—as our author himself remarks—that we must suppose that the hydatidic germ or cell passes backwards, against the current of the blood, in the veins that go to form the *vena portæ*. The chief argument in its favour is the circumstance, that what is apparently the parent cell (judging from its size, and the thickness of its parietes,) is generally found in the Liver.

Hydatid tumours, similar to those we find in the human subject, are very common in sheep, and in other herbiverous animals: they have never been discovered in animals of any other class. The Liver is the organ that is most frequently their seat. It has been said, that if one sheep in a flock is affected with them, all the others will become so, more or less. They are especially frequent in wet seasons, and when the sheep are fed in ill-

* This fluid is however most irritating to serous membranes, which it may happen to touch; as sometimes takes place by the bursting of a hydatidic cyst, and the effusion of its contents into the peritoneal cavity. The inflammation thus induced may be as rapid and intense, as that occasioned by the bursting of the gall-bladder. Mr. Cæsar Hawkins has related several cases, in which the fluid of hydatid cysts in the mamma and other parts was very irritating, and caused sloughing and fungoid ulceration.

drained pastures. There are many points in the history of Hydatids of the Liver that we could have wished to have alluded to; but our limits forbid us, and we must therefore refer the curious reader to Dr. Budd's most interesting narrative for instruction. The single remark that we can find room for is, that the only medicines, which have been supposed to arrest the growth of these Entozoa, are the *iodide of potassium* and *common salt.** It is well known that Hydatidic tumours have been, in some instances, successfully punctured and emptied of their contents. In other cases, however, very troublesome consequences have ensued upon this simple operation. Mr. Cæsar Hawkins dissuades the surgeon from interfering with them, unless the urgency or gravity of the existing symptoms seems to call for immediate relief.

We must now draw our notice of Dr. Budd's excellent work to a close. Its general character, as the reader will have perceived, is rather *pathological* than *therapeutic*; but as every improvement in our knowledge of the organic changes which accompany the diseases of any part, must eventually tend to introduce a more rational and successful method of treating them, we cannot too strongly recommend the diligent study of this volume to all physicians. It is the first comprehensive attempt, that we know of, to apply the recent discoveries in the minute structural anatomy of the liver to the elucidation of its morbid states, and cannot fail to rank the name of its author among the most enlightened pathologists and soundest practitioners of the day.

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A VIEW OF THE FORMATION, DISCIPLINE AND ECONOMY OF ARMIES. By the late *Robert Jackson*, M. D., Inspector General of Army Hospitals. Third Edition, revised; with a Memoir of his Life and Services, drawn up from his own Papers and the Communications of his Survivors. 8vo. pp. 425. Parker and Co. Whitehall, 1845.

THE Editors whoever they may be—of this new and greatly improved edition of a most valuable work, have done good service to the public, and especially to the military public, by resuscitating from comparative oblivion, a treatise which has been truly said to unfold, at every page, the

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* It is worthy of notice that Hydatid tumours are extremely rare among sailors. Mr. Bush, who has been surgeon to the hospital on board the Dreadnought almost from its first establishment, has met with only one case among the many thousand patients who have been admitted since that time. It appears also that by far the most efficacious remedy, next to a removal to a dry pasturage, for the *rot* in sheep—a disease depending upon the liver and gall-bladder of the animal becoming infested with those parasites known by the name of *liver-flukes*, Distoma hepaticum and D. lanceolatum—is the free use of common salt with the food. The curious reader is referred to the Treatise on the Sheep, in the Library of Useful Knowledge, for the best account of this disease.

feelings and impressions of the true soldier, together with the observation of the profound MILITARY PHILOSOPHER.

The author of this volume served in three British wars—was intimately acquainted with military history—and enjoyed opportunities of examining the condition of most of the great armies of Europe. He has recorded, as no other one has recorded, the character of the British soldier, moral and physical, in social life—in quarters—and in the shock of battle—and all this in language at once forcible, elegant, and dignified. In the language of Dr. Barnes, "this is a truly learned and excellent work. To princes and statesmen—to commanders and military officers of every rank, and of every country, this is a most instructive and useful book." He might have added that, to the military surgeon also, it is invaluable. Owing to several circumstances the work in question never had an extensive circulation. In the first place, although the author was a good classical scholar, and was acquainted with several modern languages, yet his style was not very inviting, and the book was printed in a clumsy quarto at a provincial press, without any of the ornaments that now embellish the literature of our times. The public too—whether military or naval, was not such a reading public as at the present day. From these and other causes, the Essay on Armies was comparatively little known, and the present edition, enriched as it is by Notes from the author's own pen, will have a wide circulation and exercise a dominant influence.

The biography, too, which extends to 120 pages, is original or nearly so, and, as much of it is taken from posthumous notes, it is in a considerable degree *autobiographical*. The editors, however, have drawn valuable materials from various sources—much from Dr. Borland—to enrich and illustrate the life of their favourite author—the whole being worked into an eloquent composition of which a PLUTARCH might be proud.

It is justly observed by the editors that those who rise to fame and fortune in the medical profession must be possessed of intrinsic talents and unwearied industry. Its members are drawn from the middle classes of society, and have neither patronage from the nobility, nor lucrative situations to look up to in their thorny journey through a laborious life. These truths are well exemplified in the history of our present author.

ROBERT JACKSON was the son of a small farmer in Lanarkshire, and born (1750) near the falls of the Clyde. His father, however, gave him a good preliminary education, and in due time apprenticed him to Mr. Baillie, a country surgeon of some distinction. In three years he repaired to Edinburgh (1768) to pursue his professional studies under the Monros, Cullens, Blacks, &c. But the *res angusta domi* did not enable the young aspirant to pursue his studies continuously here, and he was forced to take a cruise in a whaler every summer, to supply the scanty means of paying his way in the winter classes! Our author was thus early compelledto combine the practice with the theory of his profession—a circumstance that probably influenced, in no inconsiderable degree, his habits of observation in future life.

After three or four years' of winter study and Greenland practice, he determined to try the West Indies, and debarking in Jamaica he became assistant to Dr. King, of Savanna-la-mar, where he had the charge of a detachment of soldiers in the military barracks there, and first commenced

his observation of a soldier's character, habits and diseases. But he was disgusted from the beginning with the contemplation of slavery, and determined to quit a land where it existed. After four years' residence, therefore, in Jamaica, he embarked for America, but being obliged to debark, for want of a certificate, he travelled on foot across the whole island, at the imminent risk of his life in such a horrid climate.

At length he found himself at New York, in the year 1788—with little more than a few shillings, a Homer, and a Greek Testament in his pockets! He tried to get a Commission in the New York Volunteers, but, in the mean time, he was reduced to almost starvation. In this forlorn condition, he offered himself as a volunteer in the 71st Regiment, when Col. Campbell, struck by his appearance, received him, first as a military volunteer, into the regiment, and placed him afterwards as an assistant to the surgeon (Dr. Stewart,) who treated him with kindness.

"Furnished with the not very luxurious outfit of a soldier's tent, blanket, and ration, he never in his life, perhaps, enjoyed a day of more unalloyed and hearty content, as he was often heard to declare, than when he joined the 71st. Though reclining on a bundle of straw, and after a dinner of which salt pork had formed the whole bill of fare, he felt comparatively as if he had been translated to Paradise. Rescued as he was from indigence and starvation, he had now the proud and blessed conviction, that he was to earn his bread by the humble exertion of the talents God had bestowed upon him; for most devoutly through life did he aspirate the wish of one of his gifted countrymen, whose lines of life had not fallen in pleasant places:—

'Thy spirit, Independence, let me share,
Lord of the lion-heart and eagle-eye;
Thy steps I follow, with my bosom bare,
Nor heed the storm that howls along the sky.'"

Although a Commission was offered him in the New York Volunteers afterwards, he determined to remain in the Seventy-first. The men becoming very sickly he was attached to the hospital department at Knightsbridge, where he proposed and effected most beneficial changes in the food of the sick which, at that time, was the same in kind (salt pork and salt beef) as of the healthy! In this situation he evinced great courage as well as great generosity.

"During the heat of the action fought at Cowpens by a division of the British army, under disadvantages of unfavourable position and numerical inferiority, at a moment when the issue of the battle was no longer doubtful; Mr. Jackson, who happened to be well mounted, perceiving that the horse of the officer commanding the British troops had been shot under him, immediately rode up to the dismounted commander, and tendered to him the horse he was riding himself, remarking, that for his own part he was but an obscure individual, whose escape could have but little beneficial influence, but that his (the officer's) safety was of the highest importance to the army. The commander, Colonel (afterwards General) Tarleton, thus pressed, accepted, though reluctantly, the generous offer, and escaped." P. xxxiv.

It is not a little curious that Col. Tarleton, in his history of this portion of the war, has entirely forgotten—or at least passed over—this generous action of our author! Dr. Jackson himself has not recorded it in any of his works; but it has been attested by an eye-witness (Colonel Hovenden,) and acknowledged as a fact by the author, when questioned on the subject.

Mr. Jackson, being made a prisoner by the Americans, was well treated, and employed himself in tending the sick of both armies. Washington was so much pleased with our author, that he released him from prison without requiring even his parole.

Returning to Scotland in 1782, he started for London on foot, like his countryman Smollett, and soon afterwards made a tour through a considerable portion of Europe, in the pedestrian fashion, but without the advantage which Goldsmith possessed—a German flute. Many of our author's adventures on this whimsical and romantic enterprize are curious and amusing; but we dare not delay the thread of our narrative. After a ramble of seven or eight months, our author landed at Southampton with four shillings in his pocket, after walking upwards of five thousand miles, on the most scanty finances. He staid but a short time in London, when he set out on foot, in the middle of winter, for Perth, where his original regiment, the 71st, was disbanding. He travelled through the Highlands to the Isle of Skye in his favourite pedestrian style, and, on returning to Edinburgh, he married a lady of fortune and accomplishments —the daughter of Dr. Stephenson, with whom he went to Paris to study, and afterwards graduated at Leyden—not by purchase, but by actual trial and examination. Returning to England, he settled in practice at Stockton-on-Tees, where he became a popular physician, but he never took heartily to private practice.

"Our profession (says he) is a lottery, and requires something beyond knowledge to lead to success. I like it in an hospital; I do not like it as a country practitioner, and I do not find I can practise it with success. The cases generally are in advanced stages before I see them." P. lix.

There is some truth in this. The Physician is like the Poet—"nascitur non fit." He became an accomplished scholar and linguist, devoting all his spare time to classic and scientific study in the dead and living languages.

In 1791, he published the result of his observations on fever in the West Indies and America, which attracted great attention at the time. In 1793, when the war broke out with France, he volunteered to serve as a regimental surgeon in the West Indies. But the death of John Hunter, in the mean time, placed the army medical department under a BOARD, which procured an enactment, that army surgeons were incapable of holding the rank of army-physicians!! Dr. J. remonstrated with Sir Lucas Pepys, but to no purpose.

"The physician-general lost temper, and replied with acrimony, 'Had you the knowledge of Sydenham or Radcliffe, you are the surgeon of a regiment, *and the surgeon of a regiment can never be allowed to be physician to his majesty's army.*' The words were pronounced with official authority, and a final emphasis, that showed there could be no appeal. The doctor contented himself with observing, that the regulation was made in ignorance, and could not fail of being injurious to the service in its consequences; a remark which a worldly-wise man perhaps would have left unsaid; but as it was the truth, he felt no scruple in stating it as his honest opinion; and thereby no doubt sealed his doom with the triarch of the Board." P. lxiv.

He accompanied the regiment to Flanders in 1794, and His Royal Highness the Duke of York became his patron, and ultimately promoted

him, despite the Physician and Surgeon-General's regulations. His next appointment was to St. Domingo, where the duty assigned to him gave him ample means of investigating the causes and treatment of endemic diseases. Here he corrected many most enormous abuses, and saved his country hundreds of thousands in money, while he promoted the comforts of the sick.

Returning from the West Indies, he made a tour, in company with his friend Dr. Borland, through the United States, and there had fresh opportunities of pursuing his studies of fever. Arriving in England, he published the results of his experience, both in Europe and the West Indies. Having been appointed to the army-depôt-hospital at Chatham, he corrected numerous abuses; but the BOARD had a rod in pickle for him, and soon tried to pick a hole in his skirt, by stating, or, at all events, insinuating, that the mortality under his care was greater than it ought to be. Other insults were offered to our author, for which he could find no redress in any Court of Law; he, therefore, took the law into his own hand, and caned the Surgeon-general, Mr. Keate, in the street. For this assault he was tried, and sentenced to six months' imprisonment. This he bore with fortitude, not having defended the action, or even employed counsel to mitigate the damages. It is probable that, in these days, the penalty would not be more than a few pounds, when the provocation was properly delineated. This was in 1809, the year of the fatal Walcheren expedition.

"As mentioned by Dr. Jackson above, in 1810 the government instituted an important change in the constitution of the army medical department. The board, consisting of a physician-general, a surgeon-general, and an inspector-general, was dissolved. It was high time. It had either winked at, or fostered, a system of enormous abuse. The system of hospital management and discipline carried out by Dr. Jackson at the military depot of the Isle of Wight (now long since become that of the whole British army), was so simple, economical, and effective in all its parts, that it had struck dismay into the hearts of contractors and purveyors, who felt their occupation gone, under a rule of weekly audit, at which the wine and porter contractor, the medical stores and surgeons' instruments' contractor, the purveyor; in short, the entire host of harpies that had battened on the spoliation of the day, took the alarm. The very official existence of such a man as Jackson was ruin to them. This was only to be evaded by *his* ruin, and that they sought, after the fashion specified in the foregoing pages, to effect, with the aid of a not very scrupulous board, that passed enormous sums, say of seventy thousand pounds even, unaudited and unchecked! He stood the storm firm and undaunted, and strenuously demanded an investigation before a court martial, which the then commander-in-chief, Sir David Dundas, for reasons not known to us, declined to grant. But, as Napoleon would say, the destiny of the board was fulfilled—it ceased to reign. The management of the army medical department was now vested in a director-general of the whole, assisted by three principal inspectors, upon a plan analogous to that adopted in other branches of the military executive." P. lxxxix.

This opened the door for our enterprizing physician, who was appointed to the West India station, where he toiled again for years in the acquisition of knowledge respecting tropical diseases. The results of his observations are partly deposited in the Director-General's office, and partly published in his works. In 1815 he returned, and published his "*Sketch of the History and Cure of Febrile Diseases; more particularly as they appear in the West Indies, &c.*"—a work of great merit, and which alone

would transmit his name to posterity. A second edition, enlarged, was printed in 1820. Although a rigid disciplinarian himself, Dr. Jackson disliked the rigid Prussian system of terror and degradation.

"Whether with the medical or military officer," he says, "the heart must be warm with charity, the mind firm in knowledge; for no class of men are more dexterous in probing the rotten parts of the heart, or in unmasking the weak mind of their superior, than the mass of common soldiers." He goes on to observe, "The physician restores the sick soldier to health; the military officer witnesses the process; he is in some degree the master of the means, and he is judge of the effect. The soldier who is consoled by the words of friendship, as he lies feeble and dejected in the hospital-bed, gives courage to the arm in the field when restored to the vigour of health, conquers like a hero, or falls by the side of his officer and friend—his wounds in front, and his face towards the enemy." P. xci.

Anxious to see what were called the yellow fevers of Spain and the Mediterranean, he travelled thither in search of them, but was disappointed by troubles and vexatious quarantines. He then sailed for Malta, and even Constantinople, in search of the Plague, which seems to have hidden its diminished head wherever he went. He returned by Greece, and indulged his classical associations and reminiscences at Athens and other celebrated places. But the yellow fever being his chief object of research, he came back to Cadiz, and on the very day of his arrival, the fever was declared—namely, on the 25th August. At Cadiz and Xeres he investigated the epidemic, and satisfied himself as to its nature and treatment. This he published next year, under the title of "Remarks on the Epidemic Yellow Fever of the South Coast of Spain."

"This the last though not the most toilsome of our philanthropist's adventures, evinces the prompt heroism which he was always ready to exhibit in the cause of science; for heroism it is in a man of threescore and ten to forego all considerations of domestic comfort, and to grapple with certain danger, and that in its least attractive form, in order to aid in the increase of knowledge, and the mitigation of human suffering. Science has its forlorn hopes, but they are not heard of in the annals of military glory, and not marked for reward in the tablets of the statesman. We seldom see such zeal and moral courage surpassed, even in the buoyancy and vigour of youth; but our admiration of both is enhanced, when we learn that in his seventy-seventh year, a few weeks before his death, he conveyed to the director-general of the army medical department an offer to waive his rank, and proceed to Portugal to do duty in the military hospitals under a junior, with the British force then acting in that country under the command of General Sir W. H. Clinton." P. civ.

By his first wife he had three sons and a daughter—all of whom, it is supposed, are dead. The youngest son died while his father was in St. Domingo, and it is not a little curious that the father dreamt of the death of his son on the very night of the fatal event. Although not superstitious, this catastrophe made a deep impression on the Doctor's mind.

But the longest life will have an *end*, and all our wanderings will terminate in the tomb. Few men have travelled more or observed better than our author. The line applied by the Roman bard to Ulysses is strictly applicable to Dr. Jackson :—

Et mores hominum multorum vidit et urbes."

Dr. Jackson died of a paralytic affection on the 6th of April, 1827, at Thursby, near Carlisle, in the 77th year of his age, attended by Dr. Barnes.

From an eloquent and animated sketch of our author's character by his talented biographers, we can only condense a few of the most prominent features for our readers.

Dr. Jackson's height was five feet eight inches—erect and muscular, with fair and florid complexion, blue eyes, expanded forehead, Grecian nose, and cheerful countenance. His dress was neat and plain, and his air was military. He was humane and liberal, both in sentiment and action. Cruelty and harshness he detested—warm and sincere in his friendship, as was evinced by his promptly leaving his home and his practice at Stockton to attend upon his friend Dr. Borland, when ill of typhus fever in Kent. He was extremely temperate in diet, living chiefly on vegetables, and quenching his thirst with plain water, or *eau sucrée*. His veneration for pure Christianity rendered him indignant at anything approaching to a systematic corruption of its truths. He felt that devotion to the Supreme Being was the most powerful bond that keeps human nature in its right course. He never used tobacco in any form, and maintained that it was injurious to health.

"His views in regard to gestation, or exercise in the open air, and cold affusion, in fever, were original and decided. Gestation in the open air, and change of air, were adopted systematically by him in the West Indies, North America, the continent of Europe, &c., in the last stages of protracted fever, and in all cases where fever proved intractable. This was done in camp or cantonment, as the case might be; and up to the present day no one has carried out this remedial measure with the same careful boldness, ability, and tact, as he did. His success with it astonished the army, and it is hoped will lead others to tread in his steps, though it may expose them to ridicule, as it did him. He used cold water affusion in the fevers of Jamaica largely between the years 1774 and 1778, and the proof that he did so is furnished by manuscript notes at the time transmitted to the late eminent Dr. Gregory of Edinburgh. He preceded Dr. Wright in the use of this powerful curative agent by more than ten years, and Dr. Currie by more than twenty." P. cx.

Nurtured in the school of poverty, self-denial, and hardship, we find him steadily marching on, undismayed by the dark or rugged realities in prospective. Such a man has not lived in vain, had he only shown the example in his own person, how the pilgrimage of the world is to be manfully gone through without sinking into the slough of despond.

"It has been observed to the honour of Bacon, that his scientific zeal in his old age led him, during the prevalence of severe snow, to expose himself to its inclemency, in order to analyze its nature, even at the risk of his health; what then shall be said of the venerable Jackson, who at threescore and ten, indifferent to household ease and comfort, goes on a far journey to investigate the laws of contagion, or who volunteers at seventy-seven to proceed on actual military service in the field, *under a junior?*" P. cxi.

We have already noticed that Dr. Jackson's plans and suggestions saved the Government, in the colonial contract alone, more than eighty thousand pounds annually, while adding immensely to the health and comfort of the sick soldier. Surely his widow should not be neglected by the State in her declining years! Is she not better entitled to a pension than most of those who now enjoy such gifts from the country? We can only make room for one more extract.

"This is not the place to speak of his professional publications, which we briefly dismiss by saying, that they are characterized by vigour of thought, close observation of nature, and originality of views. The work, however, by which he will, if we mistake not, be best known to posterity, is the one before us. The reader who expects mere dry essays on military affairs, will be surprised as gratified in turning over its pages, to find that he is under the guidance of a masculine and profound intellect, which traces the progress of society throughout the world, inductively and admirably, while professing only to treat of the economy and discipline of armies. Already it has received the *imprimatur* of a hero's approbation—of him who was left 'alone in his glory' on the height of Corunna. The author has brought to his work the light of a wiser philosophy than was too often the fashion of his day. He demonstrates that the basis of all strength is religion, morality, and order, and that without these military power has no permanence of cohesion. He unfolds in a perspicuous manner grand views of national character, and the hosts of history are marshalled before us in more than review array. We have in his pages a clear insight into many motives, and a lucid estimate of the action and re-action of causes upon the human heart as wielded in mass for a power of offence or defence. One principle runs luminously through the whole, that *discipline* is the hoop that keeps together the staves of this great state vessel, military power; and that much indeed depends not merely upon the nature of the hoops, but the quality, seasoning, and fibre of the staves. An army should be carefully recruited, and if amenable to perfect discipline, and sensible to sympathies of patriotism and religious impression, it must be invincible." P. cxvi.

"We have thus endeavoured, as far as our materials permitted, to give a plain and intelligible account of a very uncommon man. He was rather with armies, than of them; that is, in regard to personal *status*; and yet, who has described what armies have been, are, and ought to be, so well? He was essentially a soldier in his feelings, habits, and objects, though a philosophic one, withal. He owed something to circumstances, but more to talent and integrity, and not a little to true genius. We never see him at a loss. In the barrack, the hospital, on the march, or in the action with the enemy, he was ever useful, humane, efficient, and brave. He was always going out of self, and studying to benefit others to the utmost of his power. It was the same in private life. Friendship with him was a sacred and staunch bond—a living fountain, springing from the depths of his pure humanity. That he was not altogether overborne and crushed by a cruel system of persecution, was owing, in a great degree, to the salient energies of his own mind, and partly to the support of that excellent friend, whom his merits had bound to him with chords of steel, the right gallant and steadfast Sir Harry Calvert, and of the commander-in-chief, that high-minded, generous-hearted prince, who was, indeed, not only the soldier's friend, but the friend of the soldier's friend wherever he recognized him.

"The grave received Robert Jackson as a shock of corn in his season. He descended into it, not as is often the case, with long lingering ailments, tottering pace, faculties for years benumbed, affections blunted, and feelings withered. No, but with an eye to the last of unquenched vivacity and intelligence, a countenance glowing with benevolence, a mind still unsated and thirsting for science, and a heart as vividly alive to the claims of friendship and goodness, and as tenderly overflowing with pity for human suffering, as in the days of his prime. This was a man whom a king might have delighted to honour. Something, it may be conceived, in the way of distinction from the common herd, was due to him, as a man, and as an army medical-officer; were it only for his admirable system of hospital finance, which had saved hundreds of thousands to the state, and his sanatory measures that saved battalions from disease and death. Surely for one who had turned the power of subtle analysis so largely to the public good; who had said boldly in his place what it behoved a patriotic public ser-

vant to declare; surely a practical philosopher with such a far retrospectiveness taking a calm bird's-eye view of the historical horizon, or a just and penetrating one of the contemporary epoch, and giving his views to the world with such force, originality, freedom and freshness, merited some public mark of regard! Be that as it may, had he written nothing but the work before us, he would be acknowledged as a public benefactor; for who deserves the title better than he who, unfolding the volume of human nature, impresses the great lesson that what is merely aggressive and vicious, however strong for a time, will assuredly eventually perish; that only the defensive, the patriotic, and the right, will stand the shocks of time; and that nothing is truly strong, consistent, and enduring, but what is correct in principle, and scientific in its adjustments. He has written as with an iron pen upon the rock, so that all men, but especially his countrymen, may read and reflect upon the great truths each in his place, that without a never-sleeping discipline perfect in all its parts, and a sterling piety with its corslet of holiness, no country can defend itself with armies, and no armies can be eventually victorious. But promotion cometh not from the east or the west: it is often the result more of accident than a recognised principle. If it came from a fixed principle of doing honour to all to whom honour is due, without reference to aristocratic class-leanings and influence, then would it be unintelligible how a man like Jackson came to be so overlooked or wilfully neglected as he seems to have been. His name is not to be found in the distinguished, by Gazette. Why, we leave it to those who cherish this exclusive system to declare. If we ask, what order usually conceded to men of the people he would not have graced, we can easily anticipate the reply of the wise. If we ask, what the sovereign or the government did for such a truly noble and soldierly character, in the way of of conferring distinction, the answer is as simple as was the cast of his own vigorous intellect, and amiable disposition—NOTHING! His only reward then was the internal one—a sufficient one for a good man perhaps, but for which he owes nothing to rank or power. The reflexion of this internal reward is all the honour his memory has as yet received, which will become enhanced as his works are better distributed, known, and appreciated. We find then that a man eminent for his public spirit, his services, his varied information and learning, brought up in a military school, and throwing out his ideas continually for military purposes of improvement; a man remarkable for his chivalric contempt of death in the cause of duty, no less than for his general disinterestedness, nice delicacy, and scrupulous integrity in every relation; a man esteemed highly too by many whose regard of itself stamped the honour and merit of the recipient; we find that seventeen years ago, one who was all this, died in England in comparative obscurity, unnoticed by the authorities of the day. All this happened, too, to one who had conferred important benefits on the British army; and it may be asserted, without fear of contradiction, that such palpable public neglect could not have occurred in the case of any individual in any other walk of life, having a moiety even of the intellectual and moral ascendency, or the claims of hard, honourable, and faithful services, possessed by ROBERT JACKSON." P. CXX.

Of "The Life" of the Author of the remarkable work before us, we shall only say, in conclusion, that it is altogether worthy its subject. No higher praise, we believe, could be bestowed on it. Of the work itself, we cannot, in this place, be expected to take a formal notice; but, if the declaration of Mr. Guthrie be true—(and who shall doubt it)—that "The Surgeon of a regiment learns the duty of a Soldier in addition to that of a Doctor, and a Military Surgeon ought to know the one just as well as the other;"—then, we say that, no medical officer in the public service should be unprovided with "the GREAT MILITARY WORK" of Robert Jackson.

I. A Practical Treatise on Midwifery, exhibiting the present Advanced State of the Science. By *F. G. Moreau*, Professor of Midwifery and the Diseases of Women and Children in the Faculty of Medicine of Paris, &c., &c. Translated from the French, by *Thomas Forrest Betton*, M.D., and edited by *Paul B. Goddard*, A.M., M.D., Lecturer on Anatomy, &c. With eighty Plates, comprising numerous Illustrations. Philadelphia, Carey & Hart, 1844. 4to. pp. 235.

II. The Principles and Practice of Obstetric Medicine and Surgery, in reference to the Process of Parturition. With one hundred and ten Illustrations on Steel and Wood. By *Francis H. Ramsbotham*, M.D., Fellow of the Royal College of Physicians, &c. Second Edition. London, Churchill, 1844.

III. De la Puberté et de l'Age Critique chez la Femme, au point de vue Physiologique, Hygienique, et Medical, et de la Ponte Periodique chez la Femme et les Mammiferes. Par M. *Raciborski*. Paris, 1844.

A Treatise on the Physiological, Hygienic, and Medical Management of Women at the Epochs of Puberty and the Cessation of Menstruation, and on the Periodical Discharge of Ova in the Human Female and in Mammifera. By M. *A. Raciborski*. Paris, 1844.

It is very gratifying to see how the obstetric department of medicine keeps pace with the increasing progress of the other branches of the science.—Its domain indeed is gradually widening; for, while midwifery, and the diseases of women and children, form as heretofore the great practical field for clinical and pathological research, the new light thrown on the physiology of conception, and the laws which govern fœtal development, at once introduce the obstetrician into the profoundest and most difficult enquiries of Physiology. An obstetric physician or practitioner, if he is just to himself and to his subject, is not a mere man-midwife. It is true that he waits upon Nature when she is performing one among the series of acts which combine in the process of reproduction. But, although as a practitioner in his relation to his patients, Parturition is isolated from the vital actions which have gone before and succeed it, yet no obstetrician, with the least pretension to be well-informed, will limit his inquiry to this single act. His pursuits begin with a knowledge of the male and female generative elements, and mode in which, by their material contact, an ovum is fœcundated, and they end with the completion of Lactation. There is not any part or stage of this process which can be omitted. This is emphatically a subject of the present day—one of the rich bequests of the microscope. The germinal vesicle and its nucleus in the animal ovum afford a starting-point for a knowledge of the cell-theory, and the study

of the way in which cells are multiplied, changed, and grouped together in the progress of development, is an interpreter of the laws of nutrition and secretion, and the unity of organisation. Now we think these great physiological points immediately concern the practical obstetrician. They ought and must be the beginning of his subject. He alone can use them. And amidst the mass of anatomical facts and observations which they include, he will find the solution and just interpretation of many of the difficulties and diseases he has to encounter. Sterility, extra-uterine gestation, abortion, monstrosities, and so on—can alone be rightly understood by a knowledge of obstetric physiology.

We have our design in making these observations. Midwifery is stigmatised as a low branch of science. It is enough for a man to practise it to be excluded from the honors of the College of Surgeons. And there is a certain superficial countenance given to this odium, in the way in which it is too frequently pursued. We know of no other branch of medicine which may unite, in an equal degree, large experience with profound ignorance. There is many a midwife in London who can number up her 1000 or 2000 cases, with no other practical result, than to have added a rash and reckless confidence to her very defective information. We encounter men too in practice, whose experience has accumulated with a large annual arithmetical progression, who yet remain wonderfully in the dark on the duties and objects of obstetric practice.

It requires little or no study to acquire a certain low taste for mid-wifery practice. We have seen many a desultory loiterer at a Lying-in Charity, in full pursuit after this sort of notoriety, and we have met them in after-life, as the full-blown practitioners, all misgiving and self-distrust annihilated, and stamped and labelled with the self-adjusted title of men of great practical experience.

Now we are far from underrating Clinical Midwifery—every case is instructive—but only as it is properly followed out. We believe firmly that the antidote to nine-tenths of the meddling interfering midwifery, which is the fruitful source of uterine disease, is an experimental knowledge of Obstetric Physiology. It disciplines the mind to careful and exact observation, and in an acquaintance with the harmony, order, and vast resources of Nature in the re-production of the species, is found the best safeguard against marring and disordering her operations. We think that a practical treatise on Midfery is not complete, unless it fairly enters into the physiology of conception, and the growth and development of the ovum.

The books which we would now notice are two Treatises on Midwifery, one by Dr. F. Ramsbotham, and the other by M. Moreau. The former is a second edition of a work, which came out in parts in 1841—the latter is an American translation of M. Moreau's work, a part of which, with the engravings, has already appeared in this country, being edited and translated by Mr. Streeter. We have added M. Raciborski's treatise, as introducing a subject of much present interest.

The second edition of Dr. Ramsbotham's work carries with it a significant proof of its value, from the fact that 2500 copies of the first edition have already been disposed of. It is not too a mere reprint of the first, for he has rendered it far more complete and useful by annexing a de-

scription of the diseases of the Puerperal and Pregnant States, with some statistical tables afforded by the practice of the Royal Maternity Charity, which he had previously published in the Medical Gazette. The treatises of both authors are embellished with numerous elaborate engravings, there being 110 illustrations in Dr. Ramsbotham's, and many more in M. Moreau's, some of which have been obviously copied into Dr. R.'s Atlas. These engravings are really well executed, and reflect great credit on the artists. They cannot fail to aid the student in understanding the subject, although, here and there, we see a little picture-making, such as the fimbriated extremity of the Fallopian tube in Plate XV. of Dr. Ramsbotham's work, which is frayed out very oddly.

The uterus performs two functions—it gives out the menstrual fluid, and protects, and incubates the ovum during gestation, casting it off during Parturition. The work of M. Raciborski has direct reference to the menstrual function—while the practical treatises necessarily consider it in its other capacity. Our readers must be well aware that the modern theory of menstruation is immediately connected with the full growth and dehiscence of a Graafian vesicle, and the escape of its contents. Dr. Power conjectured this in 1821, describing menstruation as "an effect of disappointed pregnancy;" while M. Negrier, Gendrin, Dr. Lee, and others have endeavoured to establish the same relation between menstruation and the casting off of ova, from an examination of the ovaria of women who have died during the flux. This theory has gained ground, and has been reinforced by the experiments of Bischoff and Raciborski on several species of mammals during the period of heat. The main result of these experiments is, that ova are found to be periodically cast off during the œstrum or heat, and that, too, quite independent of sexual congress. Bischoff has experimented on the bitch, ewe, pig, rabbit, and rat, in order to establish this proposition. It appears to us that he has proved it beyond all reasonable question, and also the observation which is associated with it—that the marks of the extruded ova are left in the ovaria as corpora lutea, the two corresponding in number.

The bearing which these experiments has upon menstruation in the human female, as produced by a like cause, is on the supposition that the œstrum of the subordinate mammals and the catamenial period are strictly analogous. We do not think that this is satisfactorily made out. Our authors, M. Bischoff, Pouchet, &c., have, in our estimation, adopted this analogy without securing it; and the inference with us is, that they have thereby failed to throw any light upon the cause of menstruation. There is this amount of analogy between the two—that in both there is a local flux of blood to the ovaries and uterus, and that the excitement of the ovaries in particular is visible in both. We quite subscribe to the doctrine, that the uterus merely gives out the hæmorrhage, which as a flux would be abrogated, were the ovaries deficient. This has long since been proved by the congenital absence of the ovaries in Mr. Pears' case, and the extirpation of them in Mr. Pott's case, both of them concurring with a permanent amenorrhœa; although we have sometimes been surprised at the regularity of the menstrual flux, both in its return and quantity, where both ovaries have been the subject of encysted disease, and almost every trace of their structure effaced. But the characteristic of the œstrum is

the high venereal excitement which denotes the aptitude for conception. And we are told by Bischoff, Raciborski, &c., that sexual desires are especially manifested in women at the menstrual period, coincident with the supposed escape of the ovum. Nay, not only so, but that the chance of conception is greatly diminished if coitus does not take place a few days before, or within eight days after, the period—the latter being fixed as the time which the ovum requires for its transit through the tube. And M. Pouchet even regards the mid-period as affording a physical impossibility to conception.

We really do not see on what ground this notion is formed. Our own experience by no means confirms the statement, that sexual desires are rife in the human female at the monthly periods—nor that conception takes place at or near this period more than at any other time. We have known several instances where conception has occurred at a fortnight and three weeks after a flow; and M. Bischoff's limit of eight or ten days, as marking the residence and protection of the ovum within the oviduct is assuredly negatived in a wholesale way by the laws of the Jews, which forbid sexual congress until the woman has been clean for eight days. We can assure M. Bischoff that this race is prolific enough with us, and that their progeny do not bear out the statement, that the risk of pregnancy is greatly diminished by his measure of the postponement of marital intercourse. It is to be noticed, too, that the period of heat in some animals, as the cow, mare, &c., comes on during lactation, very soon after the accomplishment of gestation. Here again is an obvious difference between the two functions. Indeed, we demur altogether to the analogy which has been instituted between the œstrum and the menstrual period. We think the experiments of M. Bischoff very valuable, as elucidating the place where the generative elements may meet and ova be fertilized; but we think any conclusion is strained and unsupported which attempts to fix similar phenomena, as he has shown to occur at the time of heat, as the necessary concomitant of menstruation in the human female.

To us, it appears, that the most important facts on which this hypothesis of menstruation rest are derived from the post-mortem examination of the internal organs of generation during the menstrual period. Cases have been cited by Lee, Gendrin, Raciborski, Bischoff, and many others, which seem at first sight to establish a definite condition of the ovary as the uniform attendant on the menstrual flux. This condition consists in the presence of matured Graafian vesicles at the surface of the ovary ready to burst, or of the rent calices, with the aperture on the surface still visible, and leading to the emptied but vascular sac, or the various phases of reparative action around the opening. To these have been added an altered state of the lining membrane of the uterus, which is said to be raised into fungiform villi, an expansion of the Fallopian tube, and a general hyperemia of the entire sexual system. We have availed ourselves of several opportunities which have occurred to us to test the accuracy of these appearances, and the result is, that we remain sceptical about their justifying the dogma, that there is a stringent and necessary relation between the maturation of the follicles and escape of their contents, and the phenomena of menstruation. The term maturation wants defining. If it implies simply a full sized vesicle—so far near the surface as to shine through the serous and

capsular envelopes of the ovary, which, on being burst, lets out an ovum with its pellucid double vitelline ring, surrounded by the tunic of granules and held in the fluid contained within the epithelial lining of the sac, the vascular layer of which is well covered with vessels—we do not hesitate to say that we have seen this well displayed, not only at every period of the inter-menstrual times; but even before the menses have been established. And then again, with reference to the action on the surface of the ovary, with the opening for the passage outwards of the ovum. In the first place, we do not believe this to be constant. We have undoubtedly seen the rent and beneath it an empty sac; but we have also examined the uteri of women dying during menstruation, when this has not been apparent. But, what is equally sure, we have seen the same appearances altogether independent of the catamenial time. Our own experience in the investigation of this matter has not been small, and we have found that the ovary in the general run of inspections, is rarely in a healthy state. The Graafian vesicles are altered in a variety of ways, and amongst them openings on the surface of the ovary, with subjacent vacant sacs, has been not unfrequently witnessed. Sometimes the openings are choked up with a vascular growth from below, and the appearance of a repairing rent is often given by an enlarged follicle near the surface, whose contents have been broken up and then absorbed, the falling in of the parietes, marking the factitious rent. We might greatly extend the false appearances which are seen in the ovaries, which tend materially to lesson the weight we should otherwise attach to the changes in them which have thought to be destinctive of the occurrence of menstruation.

But, secondly—it is to be noticed in Bischoff's experiments, that corpora lutea marked the site of the ova which had been cast off from the ovary. This fact is corroborated too, by Haighton's experiments on the rabbit. Where are the corpora lutea at the menstrual periods in the female? We know the office of the corpus luteum—and assuredly it is admirably designed to help forward the safe escape of the ovum from the ovary. Speaking of its function, Malpighi says "cujus ope ovulum separatur fovetur et stato tempore ejicitur." Its power of marking out and nourishing is unquestionably subordinate to the mechanism it offers for passing the ovum on to the tube. Every thing conspires to direct the impregnated ovum outwards, the vascular couch around it, the increased quantity of fluid within the follicle, possibly too the retinacula—if they really exist. Indeed, the regular uniform action of the corpus luteum in this respect, looks so much like a definite means for a necessary end, that we are loath to admit any other less regular and less apparent means for the same end. We readily admit that rents exist sometimes on the surface of the ovary, even through the capsule, without corpora lutea; but they are the results of a morbid action in the ovary, whereby its stroma is altered, and its envelopes diseased, and are widely different from openings produced by a normal process. We have never seen corpora lutea during the menstrual period—that is of a like structure and appearance as those which are seen when we *know* an ovum has been cast off after impregnation. We hope we have said enough on this subject to shew that it still needs proof, and further investigation, and that the proper subjects for the investigation and the proof are not the lower animals at the time of heat, but the human female during the menstrual periods.

Gendrin speaks of a change in the lining membrane of the uterus during menstruation, which is elevated into fungiform villi. We know this change well, and have traced its formation; but at present we forbear to say more of it, than that we have not found it a common concomitant of menstruation. The lining membrane of the womb during the flux is sometimes seen clear and smooth, when wiped with a cloth or sponge, as in the interval between the catamenia. If its tissue is pressed, a number of dark points appear, from which the menstrual fluid oozes out. And this we conceive to be the most important change in this part of the uterus. It directly concerns the alteration in its vascular structure. The fluid which comes forth is, by some, called the menstrual secretion, by others, the monthly hæmorrhage or flux, and the former sneer at the latter for adopting the views of the Ancients with reference to the discharge of blood. For our own part, we view the menstrual period as a true hæmorrhage, and that the flux itself is furnished by the open orifices of veins—not arteries. It comes from the very same veins which, when the womb is enlarged by pregnancy, are seen large and open on the inner surface of the uterus, and surrounded by its muscular fibre. We might well turn round upon the opposite party and ask them to demonstrate the glandular or other structure from whence this so-called secretion flows. We know the existence of uterine glands, but it was never contended that they furnished it.—Whence, then, does it come? On the other hand, the microscopic analysis of the menstrual fluid shews clearly that it is made up of blood-corpuscles, and the chemical anlysis of it, with its peculiarity of not coagulating, exhibits nothing more than blood mixed with the mucous secretions which it meets with in its passage from the uterus to the vulva. We think, too, that the great tendency which the uterus, in its morbid states, has in causing hæmorrhage, bears a distinct relation to this natural bleeding; and we have seen that Dr. Oldham, of Guy's Hospital, has recently investigated this subject with reference to the bleedings of polypi, which he has shewn to come from the open mouths of veins in the growths themselves. Our limits will not permit us to pursue this subject further.

In the works of M. Moreau and Dr. F. Ramsbotham most of the subjects connected with Obstetric Medicine are treated of. The former is the more elaborate work, and embraces some subjects on the Art des Accouchemens which are omitted in the latter; while the supplementary Essays on the Diseases of the Pregnant and Puerperal States, in the recent edition of Dr. R.'s work, renders it the more useful and complete text-book.

We cannot forbear to notice a subject of complaint by Dr. Ramsbotham. It appears that, very soon after his book was published in England, an edition of it, with the drawings, came out in Philadelphia; and not only so, but the Editor was anonymous, and emasculated the work, by leaving out a part of Dr. R.'s annotations and the whole of his Appendix, and then, curiously enough, translated this abominable liberty into the term *revision*. It is not necessary for us to inquire whether the book would be better if shorn of a portion of the Notes and the entire Appendix, but we fully sympathise with Dr. Ramsbotham in his complaint. The Philadelphians are fond of this sort of outrage on courtesy and integrity. It is a very smart thing to appropriate another man's labour and copy his drawings, and *revise* his work for the American public. They seem to have an establishment

for the purpose. No sooner does a good book come out in England, than forthwith an editor—Dr. Paul Beck Goddard, or some other—transforms it into an edition suited to the Western Hemisphere. We conclude that Dr. Paul Beck Goddard was too busy to work up Dr. Ramsbotham's book, and that some hireling, with a name not long or euphonious enough to appear, clipped it and dressed it for the Philadelphian community. This is much too bad. Mr. Curling's work on the Testes has received an American finish by Dr. Paul Beck Goddard, and one of the notices from the reviewer, designed to circulate a wretched puff of Messrs. Hart and Cary, publishers in Philadelphia, and Mr. Sherman, printer in Philadelphia, is headed with the endearing title of "Goddard's Curling." We really wish these gentlemen would leave us alone; we can readily spare their fraudulent courtesies, and we prefer to prosper or decline in our own proper person and dress, and the only thing we fear is, to be appropriated or absorbed by Dr. Paul Beck Goddard.

The Anatomy and Obstetric Properties of the Pelvis are well described in the works under consideration. Moreau's description and illustrations are very valuable, and we think Dr. Ramsbotham might advantageously have inserted the diagram which describes the circle of Carus. It is a true and accurate delineation of the course of the child through the pelvis, representing the confluence of the axes of the brim and outlet, and one which by a diagram is likely to be impressed on the minds of those learning midwifery. Moreau tell us that—

"Carus, with the intention of determining geometrically the direction of this route (the passage of the fœtus through the pelvis,) advises us to trace the following curve. If we take as a centre the middle of the symphisis pubis, the very point at which the anterior extremity of the antero-posterior diameter of the pelvic excavation terminates, and for a radius the half of this diameter, *i. e.*, a line 2½ inches in length, and from this centre, with this radius, describe a circle around the symphisis pubis, it will be seen that the portion of the circle which passes over the pelvis traverses exactly the centre of the superior and the inferior straits, that in its passage across the excavation it is always over the very centre of the canal.

The section on the Functional State of the Pelvis in Moreau's work is interesting and instructive. He considers, at some length, the condition of joints of the pelvis during pregnancy, and adopts and strenuously maintains the notion of their relaxation and mobility, which he describes as an established and incontestable fact. Dr. Ramsbotham speaks of the separation as "possibly taking place in the lower animals, but certainly as not usual in the human subject." This is an undefined and wavering judgment. That it occurs in the lower animals there is not a doubt. Burdach describes at length several species in which it takes place. Our own opinion coincides with those who hold the affirmative with reference to the human female. It is one amongst the vital actions which occur during gestation. The ligaments soften and loosen, synovia is secreted in larger quantity, and hence the union of the bones is less rigid and close. All this facilitates labour—not so much by the absolute increase of the diameters of the pelvis as by the yielding power it conveys to the joints. It is supposed that this does not take place, because, if even the symphisis pubis were separated to the extent of an inch—a very insignificant increase to the conjugate diame-

ter would accrue from it; and again, that any augmented mobility in the joints causes severe and protracted suffering. The first is a very good reason why Sigault's operation should not be performed, but does not affect the true subject of inquiry, and there is as much difference between the normal yielding and mobility of the joints and their undue loosening and separation, as there is between the natural subsidence of the womb during the last weeks of gestation and its partial or complete prolapse—it is in short, confounding health and disease. It is true that the former interprets the latter, of which it is nothing more than a faulty and excessive action.

Dr. Ramsbotham's work is enriched with a copy of the coloured plates of the corpus luteum from Dr. Montgomery, which must be of use to his readers.

The anatomical and physiological subjects which are involved in a consideration of the fœtal envelopes, the placenta, &c., have been partly illustrated and described by Moreau and Dr. Ramsbotham. Moreau has written a fair chapter on the development of the fœtus, which is altogether omitted by Dr. Ramsbotham. Indeed, we have no alternative than to condemn Dr. Ramsbotham's physiology as a very unsafe guide to the student, and altogether behind the present day. We regret this the more as his publisher has evidently been willing to illustrate this and every other branch of the subject, and we are solicitous that this part of obstetric science, at which William Hunter laboured so hard and effectively, should not be suffered to decline in the works and labours of his successors.

Dr. Ramsbotham, in a note, recognises Dr. R. Lee's investigations on the nerves of the uterus. We most cordially concur with him. We regard the discovery of this large system of ganglia and nervous plexuses as the most important anatomical discovery of the present day, and it is gratifying to us to pay the author of it our willing tribute of admiration for his untiring zeal and labour in displaying them. But why has not Dr. Ramsbotham, in his second edition, described them and delineated them?

The decidua is said to be "secreted—at first consisting of a tenacious fluid—and by degrees assuming the character of a perfect, organized, and tender membrane." When did Dr. Ramsbotham ever see the decidua consist of a tenacious fluid? He does not even indulge his readers with a foot-note about Weber's, Reid's, or Sharpey's views of its formation from the uterine glands, which glands are not apparently recognized by Dr. R. as constituent parts of the uterus. We do not even see a copy of Dr. Montgomery's plate of the decidua, which is sufficiently characteristic of this structure, but in its place is a bit of something which is as much like whity-brown paper as the uterine surface of the decidua.

The villi of the chorion in an early ovum are called minute-filamentous mossy vessels; and Dr. R. is tenacious about this matter, for he re-asserts it in an annotation. He says—"I look upon them as blood-vessels. They are very similar to the vascular tassels attached to the fœtal membranes which dip into the cups of the cotyledons in the gravid uterus of the cow and sheep." There is no doubt of the strict analogy between the two; but nothing can be more erroneous than to call the villi themselves blood-vessels. They are the simple sheaths which enclose the capillary loopings of the

umbilical arteries, and are no more vascular than is cuticle or epithelium. A diagram copied from Wagner's Physiology would have helped the student to comprehend this distribution, which is just as demonstrable by injection under the microscope as are the villi of the intestines. The non-vascular sheath of the exo-chorion is an active cell-membrane, performing a most important function in the nutrition of the fœtus. Mr. Goodsir has lately thrown much light upon this structure.

In describing the separation between the amnion and chorion in an early ovum, Dr. R. assures us that there is a transparent watery fluid, like liq. amnii, occupying the interval. This is quite new to us. We have examined many ova, but have never met with this fluid. The interspace is in fact filled with a reticular membrane, called by Velpeau, the *corps reticulé*, which is very teasing to dissect off, and is always seen in a healthy ovum. It apparently serves as a bed to help the raising of the caudal and cephalic folds of the amnion in their growth over the embryo, and it gradually disappears with the advancing development of the ovum.

The amnion is said to have innumerable colourless vessels which secrete the liq. amnii. This we believe is mere fancy. The amnion is a cell-membrane—structureless.

Dr. R. does not appear to be more happy in his views with reference to the placenta. "It (the placenta,) says Dr. R. has two faces, the one fœtal next the embryo and the other maternal in apposition to the uterus, it is covered on the fœtal face by the reflexed decidua, the chorion and the amnion." How, we ask, does the reflex decidua cover the fœtal surface of the placenta? It cannot and does not do so; and it is impossible to follow out the development of these parts, and not be convinced that such a notion is incorrect. The boundary of the placenta in the early ovum is the part where the decidua forms its angle of reflexion, and is raised over that portion of the exo-chorion which has not taken root within the expanded openings of the uterine glands, or, in other words, over that part which has nothing to do with the placenta.

Dr. R. tells us, that "some physiologists contend that there is a direct communication between the mother and the fœtus by means of continuous vessels. Others, that the mother's blood passes by absorption into the fœtal system. Others, again, that the mother's blood is poured into certain sinuosities or cells, existing on the maternal surface of the placenta, which are destined by Nature to receive it, and that while extravasated in these cells, the fœtal vessels deprive it of whatever is necessary for the preservation of the embryo. While another party entirely denies the existence of placental cells, and supposes that the same benefits result to the fœtus, its vessels ramifying in close approximation to those of the mother, although the mother's blood never enters the placenta, nor ever indeed leaves her system. I am myself an advocate for the last view."

We should expect that any one adopting this latter view, which to us appears quite erroneous, would at least take some pains to illustrate it. It is a question of deep interest to every obstetric physiologist; but, beyond the bald assertion of his opinion, Dr. R. does not enter into the subject. "Since the question is yet in dispute, and since its discussion would occupy much space, it would be out of place to enter upon the different arguments in a work principally directed to practical objects."

We really think Dr. R. would have done wisely to have omitted altogether the physiological part of his book, and to have kept exclusively to the practical objects; but it is nothing short of ridiculous to shirk a question of the kind we are speaking of, because its discussion would occupy too much space, when he has not scrupled to cover nearly three pages with closely printed letter-press—amassing a heap of cumbrous, useless, unsifted learning about the os sacrum.

Moreau has entered on the subject of the Signs of Pregnancy, which is not included in Dr. Ramsbotham's work. He divides these signs into the rational or equivocal, and the sensible, or those which are appreciated by the eye, ear, or finger. He regards the suppression of the menses as a sign worthy of great confidence, and looks upon the recurrence of the flux during the first months of pregnancy as an accident of this state.

"Admitting that we have been mistaken," says he, "and that some women do menstruate during pregnancy, we should say of these facts, as we have a right to say of those related by Deventer and Baudelocque, that they are so few in number and so extraordinary, that they can only be considered as rare exceptions to a general rule."

With Moreau we attach the utmost importance to this sign of pregnancy, when it is associated with good health, and the female is a married woman, and the flux has not been suppressed from some accidental or known cause. But, in cases of concealed or feigned pregnancy, it is obviously a sign, which, depending on the testimony of the female, is quite valueless. We do not concur with our author in regarding the appearance of the flux during pregnancy as an extraordinary event. We have found it happen not unfrequently, and no enquiry of the patient, or examination of the discharge, have altered our conviction, that it is a similar discharge to the ordinary menstrual flux, recurring at like periods and in the same quantity.

Moreau's description of the areola changes is imperfect, and we think that he does not ascribe sufficient importance to them.

The following quotation is taken from his description of the general signs of pregnancy, and is worthy of attention.

"Of all the changes produced by Pregnancy, the most remarkable, in our opinion, is the modification which supervenes in the nervous system. This modification is such, that it exalts the sensibility, renders women more susceptible and more liable to the action of physical and moral agents, it changes their character; from being kind, confiding, gentle, and gay, it causes some to become hasty, irascible, jealous, peevish, and taciturn; in others it gives more activity to the intellectual faculties, and disposes them to the development of nervous affections—it stamps its seal on the diseases of pregnant or lying-in women, renders their progress more rapid, their disorders more numerous, serious, and the more dangerous, inasmuch as there is less time to prevent, understand, and relieve them. It constitutes that peculiar state called puerperal—a state which conception produces, and pregnancy develops—which the pains of child-birth increase—which continues during the child-bed state—extends to and diminishes during lactation—and ceases only when the woman has resumed her usual habits of life."

Moreau briefly sums up his estimate of the various signs of pregnancy as follows:—

"(1.) No one sign can determine with certainty a recent conception. (2.) The certainty of Pregnancy cannot be acquired by the signs called rational or equivocal. (3.) Among the sensible signs, those furnished by the eye are insufficient. (4.) The audible and tangible signs, and those derived from the fœtus, can alone characterise this state. (5.) Among the last, the active motions of the fœtus may, if not lead into error, at least be mistaken for other movements produced by divers morbid states. (6.) The double pulsations of the heart, which at once denote Pregnancy, and the vitality of the fœtus, are sometimes wanting, and are never heard when the fœtus is inanimate. Lastly, the motion of ballottement is the most constant and best of all these signs, because, like the beats of the fœtal heart, it belongs only to pregnancy, exists when these pulsations are absent, and even when the fœtus is deprived of life."

There is a very full chapter in Moreau on the Classification of Labours, in which he justly gives to Solayrés the credit of establishing the relation which the presenting part maintains with the circumference of the brim, as the basis of a sound classification. Dr. Ramsbotham adopts the same classification of the vertex-presentations as M. Moreau, and they both admit that variety wherein the occipito-frontal diameter of the child's head corresponds with the conjugate diameter of the pelvis. We own our attachment to the more simple classification of M. Naegele, and we think that our authors well might have omitted the variety we have just named. To us it appears that labour is never conducted in this way, excepting under some material deviation either in the pelvis or the child's head—so decided, indeed, as to exclude such cases from natural labours. We look upon the sacro-vertebral angle as a mechanical hindrance to it, and that one of the most important functions of this promontory is to guide the head in its birth into one or other of the oblique diameters.

Dr. Ramsbotham's clinical experience on this form of presentation appears to favour the view we are advocating: "I have certainly," says he, "never been called upon to deliver by instruments when the head occupied either of the unfortunate situations now under discussion—(*i. e.*, cases in which the sagittal suture runs parallel with the antero-posterior diameter of the brim)—but I have known them to obtain at the commencement of labour, and I have traced the head make a turn to one or the other side, being forced into that position by the strength of the uterine contractions in an analogous manner to the turn effected in all natural labours, when it is on the point of being expelled through the outlet."

We quite agree in this—and have met with and traced the same primary position, changed in the same way, not by the strength simply of uterine contractions, but by the guidance under the influence of these contractions of the sacro-vertebral angle, which directs the head into the oblique diameters. We believe that the head, at first, is not unfrequently in this position, but changes uniformly into the usual path. Hence we should not admit this variety into a classification of vertex-presentations. We regard, too, those presentations where the sagittal suture occupies the transverse diameters of the pelvis, as only a stage in its passage to take up the more true position in the oblique diameters. The sagittal suture may be detected indifferently running more or less obliquely at any point between the transverse and oblique diameters, varying its position in its route to the latter, but it would hardly consist with an enlarged view of the mode and mechanism of parturition, to subdivide the presentations

into a like number. In cases where the head is found very high up—for instance, when the membranes have either spontaneously ruptured or have been artificially broken, having held an undue quantity of liq. amnii—we have traced the sagittal suture pretty nearly parallel with the conjugate diameter. After a pause, during which the uterus is shrinking and contracting on the child, a pain or two moves the head, and the suture is then found on the transverse diameter, and under the influence of uterine contraction it is transferred into the oblique diameter—then one or other parietal bone is found to present, denoting the altered movement of the head on its own axis, and so with a partial movement of rotation, slightly shifting the presenting part to the posterior quarter of the parietal bone, the head emerges from the outlet. All this is done surely and correctly—there is the mechanism for it—the provision against mechanical error—and that error is avoided. It is a law—a rule of nature: and as long as the pelvis and the child's head are healthy, holding their mutual and just relation, so long, we believe, there is a security against that variety of vertex-presentation, which, in the infancy of obstetric knowledge, was thought to be the invariable one, and which still holds a questioned and doubtful existence in the classification of some of the authors of the present day. Amongst the irregularities in head-presentations, Dr. R. classes those in which the anterior fontanelle is behind one or other acetabulum, or, as he expresses it, the face towards either groin. He admits the occasional three quarters' turn described by Naegele, by which the face is directed backwards; but he thinks that this distinguished obstetric physician has overrated the frequency, as well of the presentation as of the mode of the head's passage, when it does occur.

We have already seen something of the conservative character of Dr. Ramsbotham, and we suspect that it peeps out here again. He has lost all ductility, and will not bend to anything that looks like novelty. Thus Naegele's views are confined to one of the annotations, and he describes the diagonal positions with the face behind the groin as "tedious cases, with greater sufferings, and the time of duration more protracted than usual." We are not disposed to assent to this conclusion; for we have frequently witnessed the three-quarters' turn completed, without any apparent difficulty, without augmenting the suffering or protracting the labour. One of the great practical advantages resulting from a correct estimate of Naegele's views on the mechanism of these presentations, is, the reliance it induces in the resources of Nature. There is no need of interference—no need of rectifying positions. Dr. R. counsels his readers not to meddle early in the labour where the face is forwards, and behind the groin—in the hope that Nature will complete the delivery. "Presuming, however, that, after a number of tolerably strong expulsive pains, no advance takes place in the situation of the head, it will then be proper to embrace the cranium between the three first fingers and the thumb of one or other hand, and to give the face an inclination to one or other ilium, according as its original direction was to the right or left groin." The same manœuvre is to be performed when the head enters with its long diameter in the conjugate diameter of the pelvis. We firmly believe this practice to be worse than useless. There is no doubt that apparent success has frequently followed its adoption; but the propitious result is due to natural causes, and

not to the artificial means. We think it very difficult, if not impossible, to command the necessary power by the hand alone to effect this rotation where only it could be needed in the first-named position, viz., where the head is firmly wedged in the cavity of the pelvis, requiring much time to overcome the resistance. But we think it better practice to wait patiently, as in the more usual vertex-presentation, and treat both class of cases exactly in the same way. With the exception of Dr. R.'s views on the mechanism of these vertex presentations, we think the remainder of the work on practical midwifery is in general characterised by a sound discretion, and a practical familiarity with the subjects he treats of. In speaking of that variety of breech-presentation where the face and front of the child are directed anteriorly, he says, "I believe that in no instance, if the case were left entirely to Nature, provided the child and pelvis were of common size and form, would the face be expelled under the arch of the pubes." In this we fully concur, and we only want Dr. R. to extend the same amount of implicit faith in Nature's ways and means to the conduct of a head under like circumstances. We could have well dispensed with the unsightly drawing of an operation under this form of breech case, which almost spoils and counteracts the wholesome precept we have just quoted. "When the shoulders," says Dr. R., "are about to pass, it is our duty to take care that they are offering themselves in that position most favourable for their exit; and if they be not, to turn one under the arch of the pubes, and the other into the hollow of the sacrum." And the drawing sketches the hands of the operator in an active effort to secure this turn. We think these attemps to turn about the child, under the mistaken notion of helping its exit, have been a fruitful source of bad midwifery practice in the pelvic-presentations. Moreau's plates are beautiful representations of the mechanism of breech cases, and there is happily not one where the accoucheur's hands are at work.

In the added Section on the Diseases of the Puerperal State, we find Dr. Ramsbotham separating congestion of the uterus, or, as he terms it, vascular congestion, from hysteritis. The first is a necessary forerunner and companion of the last affection, but it may fall short of it, and is readily amenable to treatment. We recognise the distinction as practical. The congestion is venous, and generally, but in our experience not always, the lochia are suppressed or scanty. There is no rigor, and but little excitement of the circulation. The uterus is tumid and tender, and contraction causes much suffering. It may follow any labour, but a lingering or instrumental labour, or where the hand has been introduced, are apt to induce it. A frequent cause of it, in our experience, is a neglected state of the bowels, and it soon yields to a free purgation or a large enema. Dr. R. leeches, and gives a brisk purgative of calomel and other cathartics, and uses emollient injections. We have rarely found it necessary to leech; for, when the bowels are cleared, and hot narcotic fomentations applied to the vulva and hypogastrium, the venous circulation is relieved, the lochia flow, and the uterus diminishes in size and sensibility.

Dr. R. regards phlegmasia dolens as one of the most interesting diseases affecting the puerperal state. He thinks the left leg is more frequently attacked than the right; and this "may probably," he says, "in some inexplicable manner, be dependent on the different distribution of

the right and left spermatic vein." He thinks that those who have suffered profuse uterine hæmorrhage are frequent subjects of it. In accordance with the dissections of Dr. Robert Lee, and the author's late colleague, Dr. David Davis, to whom he ascribes priority in the discovery, Dr. R. looks upon the venous system as that mainly involved in this affection; and very justly, in our minds, disclaims its near relationship with puerperal fever. It may come on in the course of puerperal fever, and be excited by a puerperal poison; but we think with our author, that there are important distinctions between them. In the treatment, Dr. R. advocates local depletion and mild aperients, for powerful cathartics are generally injurious; the limb is to be enveloped in new flannel, over which there is to be a covering of oil-silk. When the affection has lasted some days, and the pain still continues, advantage may be gained by leeching over the femoral or popliteal veins, and the use of the local vapour bath. And in the more chronic stage, frictions, with or without stimulant embrocations, and a properly adapted bandage are of essential service.

There is a useful chapter on Puerperal Mania, from which, however, have not space to select any passage.

Dr. Ramsbotham has bestowed some pains on the chapter which treats of Puerperal Fever, and on this most perplexing and intricate disease Dr. R. has advanced somewhat novel views. It is true that he enters on the subject "with unfeigned diffidence," and "he hopes he may not be deemed presumptuous in stating," &c., &c. All this is very pretty, languishing, and lady-like, and would be very becoming in a man just past his teens, in his thesis for a degree. But when Dr. R. tells us that "his opinions are not grounded on a single series of cases, but that, having carefully watched its annual appearance in the eastern districts of London, they are deduced through the experience of a number of years, from cases occurring under many varieties of circumstances, and in all ranks of society from the most distressed pauper to persons in comfort and affluence"—we have a right to expect something which bears the mark of maturity, unclogged with trifling apologies.

Dr. R. does not like the term puerperal fever—he thinks it vague and undefined, and that it has been a snare to practitioners, and has caused fatal mistakes. It appears to him that the term has been applied to four very different diseases, which he describes under the titles of Peritonitis, Acute Tympanitis, False Peritonitis, and Typhus.

Puerperal Peritonitis appears under two forms, sporadic and contagious or epidemic, the latter of which may be communicated through the intervention of a third person—the nurse or medical attendant. Both forms are described together. The attack may be acute or insidious, and the epidemic form partakes largely of the nature of erysipelas. Among the exciting causes, the peculiar states of atmosphere are, we are sure, most properly insisted on; but Dr. R. speaks most obscurely of the immediate cause, mentioning a poisoned circulation as the opinion of others, but "with more truth and justice (he says) Locock and Ingleby regard the primary impression as made on the nervous system."

The symptoms which attend an acute case of Puerperal Peritonitis are well and faithfully described—the acute agonising tenderness, with the posture it occasions—the permanently quick pulse—hurried respiration—

short cough—peculiar countenance—the frequent suppression of both lochia and milk—the tendency to metastasis—then the period of effusion, tympanitis, delirium, sinking, and death.

"When the disorder appears as an epidemic, though the chief symptoms are still the same, many are greatly aggravated. The pulse is much more rapid than in the sporadic variety; it frequently rises at once to 140 or 150 in the minute, and is at the same time very small and easily compressed; the fever assumes more of a low type even from the commencement, and runs its course with far greater rapidity; the prostration of strength is more complete; the skin is cooler, being seldom above the natural standard; the belly becomes more early swollen and tympanitic; the breath acquires a faint and earthy odour; hiccough often occurs, from the irritability of the diaphragm, consequent on the distension of the stomach and intestines; abscesses form occasionally, either among the muscles of the extremities, or within or around the joints; and Lee, Marshall Hall, Locock, Ferguson, and Rigby, mention that the eyes, particularly the left, are sometimes attacked with a rapidly destructive inflammation; but this I have myself never observed; probably because the disease is always more severe in hospital practice." P. 586.

The morbid appearances are said to be "in different cases very generally the same." Fetid gas in the abdominal cavity, the result of rapid decomposition of the body after death—the peritoneum and omentum injected, and in patches, thickened and opaque—a varying quantity of serum gravitating towards the pelvis—patches of lymph, more or less consistent, and sometimes exclusively coating the surface of the uterus, are the evidences of peritonitis. The uterus is generally contracted—its proper structure sometimes soft and dark in colour, with pus either in its veins or its structure. The ovaries frequently are more vascular, and coated on their surface with a thick lamina of lymph. Not unfrequently they are reduced to a pultaceous mass, of a larger bulk than usual, and occasionally they are even converted into abscesses.

Sterility sometimes follows an attack of puerperal peritonitis, which may well be expected when the lesions of the ovaries, tubes, &c., are considered. In the treatment, Dr. R. is an advocate for vigorous antiphlogistic measures. Bleeding, early in the disease and largely, taken in full stream, until syncope is produced, is the first and most efficacious measure. Dr. R. thinks that this measure falls into discredit, by those who are prejudiced against it, by the blood being withdrawn either in too small quantity, or at too late a period in the disease, when in fact the stage of exhaustion has set in. After bleeding, the next object should be to purge freely. Ten or twelve grains of calomel, followed by a dose of infusion of senna or jalap, repeated every three or four hours until stools are procured; and, if the draught is rejected, an enema, or a drop of croton oil, are the means selected by Dr. R. A second bleeding may be practised if the disease, having only been suspended, should return with violence in a few hours; or should the symptoms be mitigated, 18 or 24 leeches may be applied over the abdomen, followed by fomentations or a warm well-made linseed-meal poultice, on which may sometimes be sprinkled some spirits of turpentine. Dr. R. does not like blistering the surface of the abdomen, but he sees no objection to applying blisters to the inside of the thighs. Calomel and opium, or Dover's powder, in the proportion of three grains of the first to a quarter or half-grain of opium, or an equivalent quantity of

Dover's powder, are to be given every two or three hours, until ptyalism is produced, or the abdominal tenderness disappears.

Dr. R. does not place much reliance on emetics, and restricts their administration to cases where vomiting ushers in the disease.

"If the lochia be suppressed, or possess a bad odour, which is almost always the case, the vagina may be syringed every four or five hours with warm water, or a weak solution of the chlorates." The sparest diet ought of course to be allowed.

These active means apply only to the first stage of peritonitis. They must be changed, when the second stage or exhaustion sets in, for a stimulating and supporting plan. The disease throughout requires the most narrow watching on the part of the attendant physician.

"Every one must acknowledge that this subject is beset with great difficulties, both in description and practice; and these difficulties are increased by the fact that the various epidemics, whose histories we possess, have differed much from each other, being modified by the constitution of the atmosphere, and partaking much of the character of the then prevailing diseases. What Sydenham has designated *the constitution of the year*, has scarcely been taken into account in the treatment of these diseases; this, however, it is of the utmost importance to attend to; for we shall invariably find that, if the common fevers of the season bear depleting well, the same means will prove efficacious in arresting the puerperal diseases at the same time; while, on the other hand, if the typhoid type prevail, the lancet must be employed with a more sparing hand." P. 598.

The Acute Tympanitis of Dr. R. is nothing more than a variety of what Dr. Marshall Hall has described as "Intestinal Irritation," but he has selected the title on account of the prominent and peculiar symptom being a sudden and excessive tumefaction of the abdomen, accompanied by intense pain and depression.

The affection bears a strong resemblance to puerperal peritonitis. It begins two or three days after delivery with a severe rigor, succeeded by great heat and dryness of skin, both the rigor and heat of skin being more marked than in peritonitis. The pulse rises to 130 or 140, sometimes fluttering and tremulous, at others fuller and firmer than in peritonitis. The countenance becomes early changed, though not so anxious as in peritonitis.

"Most severe pain in the head is experienced, with intolerance of light and noise, uninterrupted wakefulness, and in many cases even delirium. Very early in the disease the abdomen swells inordinately and rapidly, becomes very tense and painful, and the transverse colon particularly can in many instances be distinctly traced: pressure aggravates the sufferings. The milk ceases to be secreted; the lochia are generally suppressed; there is great langour; an unwillingness to speak, or take nourishment; the patient lies on her back, with her legs drawn up, unsolicitous about herself, her infant, or her friends; the bowels are obstinately constipated.

"As the disease gains ground, the belly increases in size, pain, and tightness; the tongue becomes dry and brown; there is hiccough, or vomiting of offensive matter, muttering delirium, subsultus tendinum, and most of the symptoms that denote the last stage of fever; but if recovery is to be expected, the swelling and tenseness of the abdomen subside; the pain gradually goes off; the pulse becomes slower; the tongue moister; the skin cooler and softer; there is no vomiting; the intellects remain unimpaired; a desire is expressed for food; and the bowels act, together with the expulsion of a large quantity of flatus." P. 601.

"*Diagnosis.*—The symptoms of this disease are so nearly identical with those of peritonitis, that is most difficult to draw any distinctive mark between the two. The only prominent circumstance in which any difference can be observed, perhaps, is the time when the swelling of the abdomen takes place. In peritonitis this tumefaction is the consequence of inflammatory action, and depends partly on effusion of fluid into the peritoneal cavity, and partly on inflation of the intestines; and it does not appear until the disease has existed for some time. Pain, then, is the first symptom, and the swelling occurs afterwards. But the order is reversed in tympanites; the swelling occurs here in consequence of the rapid effusion of gases, and the pain is subsequent, and produced principally by the distension of the intestines themselves, combined, perhaps, with a morbid condition of the nerves. This, although but one diagnostic sign, is the best I can point out, and will, I think, generally enable us to discriminate between the two diseases. I may add too, that in peritonitis the patient generally expresses great anxiety about the result of the case; while in tympanites the nervous energy seems so deadened, that a state of perfect apathy is induced." P. 602.

The treatment is directed to relieve the over-distended state of the intestines, to increase their tone, and allay irritation. Warm carminatives and purgatives are best to be used until the bowels are emptied, and then a dose of opium. Of all internal remedies Dr. R. most depends upon the oil of turpentine in two or three drachm doses suspended in white of egg or mucilage every four hours. The diet should be nutritious, easily digestible, and food given at short intervals. Even moderate stimuli may be given. Dr. R. has seen some morbid appearances in fatal cases although comparatively few, but even these few are not mentioned.

"There is another affection of the puerperal state somewhat similar to the last in many symptoms, but differing from it in its chief feature, there being no tympanitic swelling of the abdomen. This was first described by Gooch, and is called by Ferguson *transient*, and by Locock and Rigby *false, peritonitis*."

Dr. R. has adopted the latter title, and has described the disease as it has already been described by Ferguson, Rigby, &c. The subject itself is of prime importance; but, however perplexing individual cases may appear, the grand and broad distinction between neuralgia or irritable diseases, and those of an inflammatory nature are now well understood. No well-informed student at a hospital would think of making mere abdominal pain the ground for active depletory measures. A severe stitch in the side is not always pleuritis or hepatitis, and diffused abdominal pain, whether connected with the puerperal state or not, is not the necessary representation of inflammation.

A fever allied to typhus is that to which the term puerperal fever ought in Dr. R.'s opinion more properly be applied.

"Typhus, indeed, is very rare in the puerperal state—the most uncommon of all the affections which have been described under this denomination. It commences at the time after delivery most usual for serious disease to begin—about the second, third, or fourth day. It is perhaps ushered in by shivering, but this is by no means always the case. This is followed by the most severe pain in the head, and along the spine, accompanied with great depression of spirits; soon pain in the belly is also complained of; the abdomen swells somewhat, the countenance becomes dejected, and the eyes are very sunken. The tongue is early coated with white fur, the pulse very quick, and the skin hot and dry. There is usually suppression of milk, and sometimes of the lochia. Vomiting seldom

occurs in the first stage, and the bowels are easily acted upon. When the disease is running on to a fatal termination, the tongue very soon becomes dry, brown, and raspy; the pulse is quicker and weaker; there is low delirium; the belly swells from intestinal flatus; there is vomiting of dark matter; laboured respiration; coma; and, indeed, all the symptoms of the worst kind of typhus.

"I have no doubt this disease is propagated by contagion; and it may be excited by a loaded state of the bowels, and perhaps by anxiety of mind, and other similar depressing causes.

"*Treatment.*—Except in the early stage, bleeding from the arm will be generally improper, and even then should be restricted to plethoric patients. Our principal reliance must be placed on purgative medicines, aided by mercury and salines; but I fear the power of remedies in subduing this disease will be found but trifling. In the first instance, a few leeches may be applied to the temples or forehead, or a blister may be placed over the nape of the neck. A full dose of calomel should be exhibited, which must be followed up by purgative medicine; and after free evacuations have been procured, small quantities of calomel and opium should be given at short intervals, with saline medicines. The cathartics will generally cause the expulsion of a large quantity of dark, fætid, offensive stools, with hardened scybalæ, which have remained pent up within the bowels for a long time. I think it would be unwise to continue with the purgative plan when the intestines have been entirely unloaded, because of the depression which must accompany the drain from the membrane, but esteem mercurials and salines, or tonics, stimulants, and carminatives,—according as the disease displays features of excitement or depression,—as the most useful remedies. In the low state, bark, camphor, and ammonia, appear particularly indicated." P. 608.

Hidrosis is treated of separately, as independent of puerperal fever. It is the disease which Dr. Blundell, with strange pedantry, brought out under seven different varieties, which Dr. R. has been good enough to consolidate into one. Dr. Blundell's "ultra-malignant, malignant, acute, lingering, mutable, fugacious and remittent" varieties, are all happily sweated down into a simple description of a child-bed complaint, in which copious and frequently mortal diaphoresis is the prominent, peculiar, and frightful symptom. We transcribe Dr. R.'s account:—

"*History and Symptoms.*—Hidrosis usually first shows itself within four or five days after delivery, and is almost invariably ushered in by more or less of rigor. Like most of the dangerous puerperal diseases, the sooner it appears after labour the more severe are the attendant symptoms, and the greater is the impendent peril. It has sometimes supervened on miscarriages of an advanced date; and, whenever I have seen it under such circumstances, it has always been preceded, and, I think I may say, excited, by a large loss of blood. Speedily after the shivering, or cold sensation, a degree of heat is experienced, which soon disappears, and gives way to an universal diaphoresis, in profuseness and intensity greatly beyond what might have been expected from the slightness of the two preceding stages. This copious sweating, far from being a relief, brings with it a feeling of the most abject depression; the pulse, which had risen rapidly, does not become less frequent as a consequence; the thirst, generally from the commencement urgent, does not abate; and no mitigation takes place in any of the symptoms. The cuticular secretion exhales a most unpleasant odour; it is very different from the pungent, acid swell, accompanying miliary fever; and yet is always equally characteristic. It mostly resembles the smell of newly-turned earth; and the breath also is faint and sickly. As the disease progresses the pulse continues to rise; but it often varies in a manner that is exceedingly unusual; at one period of the day being comparatively slow,—at another almost countless; and this alteration goes on day by day, until either the disease abates,

or collapse and prostration supervene. Its average frequency is between 100 and 140 beats in the minute. It is seldom firm or hard, generally soft and small; but sometimes round and bounding, and yet most easily compressed. The tongue is almost always moist, and slimy; it is seldom thickly furred, nor raspy, even in the last stage; occasionally it bears throughout a perfectly healthy look; and never have I remarked it morbidly red, as it often is under intestinal irritation. The secretion of milk is soon suspended or much diminished; and the lochia either cease altogether, or, what is more common, become scanty and fœtid. The bowels act easily, and the motions are offensive, or unhealthy in colour. Diarrhœa often sets in, even early in the complaint, which it is difficult to check. The urine, notwithstanding the patient is constantly bathed in perspiration, is plentiful, and occasionally secreted in preternatural quantity. The heat of skin is not above the ordinary standard; and the sensorium is not *violently* disturbed. The state of mind, however, is often very peculiar; there is at one time present great apathy and listlessness; or perhaps no small degree of despondency and fear. At another time a quickness of manner may be remarked, or a degree of waywardness and pettish obstinacy, very foreign from the natural character; and then, again, a calm submission to everything that is recommended to be done. In some cases that I have met with, an intense interest has been evinced in things of trifling moment; and expressions of gratitude for small services rendered have been uttered with a fervency much beyond what the occasion called for; so as to lead to the suspicion that mania would soon break out. The countenance is usually placid; though pallid, bearing its natural expression; and very different from the haggard, anxious cast of features that accompanies the malignant form of puerperal peritonitis. The patient dozes, but only for a few minutes at a time: and these snatches of sleep are not refreshing, nor followed by any abatement of the febrile paroxysm. Pressure on the general surface of the abdomen does not give pain; but if the hand be applied steadily, and with firmness, over the uterine region, some expression of suffering is called forth. As she lies quiet, however, she complains of no abdominal uneasiness: the posture generally chosen is on the back, or inclined rather to one side, with the thighs slightly flexed. Sometimes erratic pains are present; and occasionally an acute pain in the side, similar to what is felt in pleurisy. If the disease does not give way to the means resorted to, the pulse continues to increase in frequency; the abdomen, sometimes, though by no means universally, becomes tympanitic; when it does so, the evolution of gas is generally rapid, and takes place only a few hours before death. Vomiting of an offensive matter supervenes, but almost without effort, and sometimes attended with hiccough; uncontrollable diarrhœa comes on; the respiration is hurried and irregular; and the patient gradually sinks into a state of complete prostration and collapse. Low, muttering delirium mostly appears before death. In these respects the termination of hidrosis resembles that of most of the dangerous febrile diseases." P. 612.

The morbid appearances have principally been found in the uterine veins, which have been seen to contain pus, to be obstructed by coagula, and their lining membranes softened, turgid and semi-gangrenous. This, however, has not uniformly been the case, and Dr. R. relates an instance where there were no other lesions but slight abrasion and indistinct ulceration in the large intestine, although the veins were carefully examined, and their contents analysed by the microscope.

Amongst the exciting causes of Hidrosis, Dr. R, mentions loss of blood as the most frequent. "For of the many cases," says he, "which have fallen under my notice, I have not seen one where there had not been hæmorrhage during labour, and in the majority it has followed the removal of an adhering placenta by the hand introduced into the uterus."

Dr. R. does not venture to bleed in hidrosis, but "perhaps (he says) this may be attributed in those cases that I have seen, to the copious hæmorrhage that has preceded the attack." He enjoins very moderate purgation, and disapproves of mercury.

"Tonics, carminatives, and stimulants appear the most suitable remedies. Bark, especially quinine and the mineral acids, even from the onset, may be had recourse to; and the system must be sustained by any nutritious diet that the stomach can most easily assimilate. I think in most cases a liberal quantity of wine, or even brandy, may be allowed. During the progress of the case opiates will most likely be called for, either to keep down nervous excitement, to procure sleep, or to allay undue intestinal irritability; but they should not be trusted to exclusively. The good effects arising from their use will be procured, by administering them in moderate doses; and opium itself, or the salts of morphia, will be found the most beneficial of this class of remedies. Ammonia, when there is great depression, will be indicated, and it may be given in combination with the decoction of bark; or, conjoined with other stimulants, alternately with quinine and the mineral acids; or with chalk and opium, if the bowels are much relaxed." P. 617.

Our own experience of this form of disease leads us to accord with Dr. Ramsbotham in placing our reliance wholly on the supporting system. We have never thought of bleeding generally, although we have applied a few leeches low down on one or other side over the neighbourhood of the ovary, when we have detected pain there. But even this local bleeding we have sometimes wished to recal, so deep is the depression of life under these exhausting puerperal sweats. We are lavish in the use of quinine, giving two or three grains every hour, with small doses of opium in the shape of pills, which are less likely to excite the vomiting which sometimes attends this complaint. Sponging the surface too with a solution of nitro-muriatic acid is a good local application.

We cannot, on the present occasion, enter critically into a review of Dr. R.'s four diseases which are the equivalent of the puerperal fever of other authors. We cannot say that we think he has contributed much towards elucidating the disease. We do not think that his readers will detect those varieties which are comparatively harmless from the severer sort, nor treat them any better from his description of them. For our own part we do not think we shall ever be induced to mention the term Acute Tympanites, except to reprobate it. The description of it appears to us to be anything but the mild disease to be relieved by carminatives and aperients, which the author makes it out to be; and as to the diagnosis which Dr. R. has attempted to establish between it and Peritonitis, we think it quite unequal to the purpose. Dr. R., we believe, has missed altogether the one great clue to the comprehension of this and all the varieties of puerperal disease, namely, the infection of the blood itself. Hence it is that there is a want of reach, and clearness in his descriptions. He is like a man who has climbed a mountain until he has got into the clouds, but he cannot go higher so as to overlook them. He has lost or failed to secure a great principle, and we find the want of it in every page of these chapters. An animal poison is introduced into the system—it is so subtle that the dress or hair of a person exposed to it may transmit it to another, the only essential condition to the one receiving it, being, that she should have recently gone through labour, or the poison may have a

material origin in the uterus, a putrefying placenta, or clots, &c., or pus from inflamed veins. As a poison it is carried by the circulation to all the organs and parts of the body, and its stress is felt first in one, then in another, and more in one than in another. It is sometimes so mild that it is cast out by a copious sweat or diarrhœa, by hidrosis or intestinal irritation, with or without *acute tympanites*, but in others it is so grave and injurious, that, having inflamed one or more tissues or organs, and principally that one which is nearest the seat of its absorption—it prostrates the powers of life. The treatment which is fitted to meet these varying circumstances cannot be uniform. One case will bear, and requires, active depletion, whilst another will need support. Peritonitis may exist in two cases, and yet it is quite possible for one to require a different and very modified treatment compared with the other.

We do not wish to pursue this subject further; but, since the masterly Essay of Dr. Ferguson on Puerperal Fever, we should have thought it imperative on any subsequent writer either to admit the principle he contends for, or plainly and experimentally to combat it. We don't understand how it can quietly be passed by.

We are much pleased to see a chapter on Scarlet Fever during the puerperal state, when this most dangerous disease becomes more dreadful. Dr. R. is an advocate for its Treatment by Ammonia, and free and watchful support. We cordially concur with him. Why did he not add a chapter on Small-pox? We have often wished to see an essay on the modifications of the exanthemata during the puerperal state, when their poison is rendered more virulent and fatal by the peculiar condition of the female.

Our limits will not permit us to examine at length the chapters on Retroversion of the Womb, Extra-uterine Gestation, or Abortion. They are in general well and clearly written, and contain much practical information.

We have engaged more critically in the review of Dr. Ramsbotham's work than in that of M. Moreau, because it is of a more recent date, more immediately concerns English students of midwifery, and has many attractions in the Atlas part of it, for popularity. Dr. Ramsbotham inherits an obstetric title, and his constant appeal to his father's opinions and experience is a graceful and most becoming tribute of respect to the distinguished author of the "Practical Observations on Midwifery."

We have freely criticised this second edition, and have marked its more prominent errors and omissions; and we hope, if the work reaches a third edition, that the former will be corrected, and the latter supplied. If the physiological portion is carefully re-written, and brought up to the knowledge of the present day, it will contribute much to extend its usefulness, and adapt it to the wants of students. But, at present, it is in this respect far behind the works of Rigby, Churchill, Campbell, and Dr. Lee. We do not hesitate, however, to recommend most of the chapters on practical midwifery as well worthy the careful study of students and practitioners, as they embody those rules and principles of treatment, which, descending to us from our predecessors, have stood the tests of time and further experience, and have been sanctioned and adopted by the teachers and writers of the present day.

SURGICAL AND PRACTICAL OBSERVATIONS ON THE DISEASES OF THE HUMAN FOOT: WITH INSTRUCTIONS FOR THEIR TREATMENT. TO WHICH IS ADDED ADVICE ON THE MANAGEMENT OF THE HAND. By *John Eisenberg*. 4to. pp. 252. Renshaw, London, 1845.

THIS is a book on an attractive subject. We have seldom met with a person of either sex, however deeply absorbed in the serious pursuits of this world, who, if possessing small and well-turned feet, or white and neatly-shaped hands, were not proud to display and careful to preserve them, and every one recollects the vain notion of our great and titled poet, of the size of hands as indicating birth, his own being aristocratically small.

John Eisenberg, who dedicates his work to Dr. Marshall Hall, seems to have felt the necessity of showing good cause for writing a book, and, like most authors, is desirous of impressing the public with the importance of his subject. Accordingly, after contrasting the neglect which the human teeth, and the diseases of horses formerly experienced with the attention now paid to these subjects by educated men, he expresses a hope that, before any great length of time has elapsed, Chiropodists will be admitted to their place in the social system, and that, as in the large towns of Germany, the staffs of our hospitals will be increased by dignified professors of an art, who, to the author's surprise, now rank, in this enlightened country, only as humble corn-cutters.

In a society consisting of persons either too fastidious or too indolent to cut their own corns, a necessity may exist for this class of operators, and we have no objection to their assuming the euphonious title of Chiropodists, and as such, *taking their proper place in the social system;* but we most strenuously resist any invasion of our province as Surgeons by any of these special professors, whether native, or foreign, and, although our author takes some pains to convince his readers to the contrary, we must take the liberty of stating that every sensible surgeon perfectly understands the structure of corns and bunions, and their causes and treatment, as well as the management of some other small affections, such as the "growing-in of the nail into the flesh," as it is termed, warts and chilblains, which our author seems anxious to take out of our hands. It is really time to extinguish these pretensions, for if we give up to advertising Aurists and Oculists, Dentists, Chiropodists, Orthopædists, Skin-doctors, and Bath-proprietors, all they would claim, there will be very little left to the charge of the general Surgeon.

If a large and handsome volume can confer dignity on his subject our author has fully availed himself of the advantage. This book is of quarto size, printed in large type, with ample margins and handsomely bound in blue cloth with gilt-edged leaves. It is indeed, as the author no doubt intended, an elegant drawing-room book. We shall content ourselves with gleaning such practical remarks and hints as may seem likely to interest or to be useful to our readers.

"The author does not coincide in the general opinion that corns are the result of pressure. He remarks:—

"It has been erroneously asserted that pressure upon the epidermis is the sole cause of corns; that its vessels, becoming injured and hypertrophied, throw out a larger quantity of lymph than is necessary; and that the consequence is the generation of layers, which become interwoven. Were pressure the sole cause of corns they would not be confined to so small a surface, they would necessarily embrace a much larger portion of the foot, and we should find the heel, where the greatest pressure exists, the most frequent seat of disease. Some persons are annoyed in a most extraordinary degree by corns, who are the most careful in the selection of their shoes, whilst many who are in the habit of wearing such tight shoes as to be almost incapable of walking, and who seem to wish to resemble, in their incapacity for movement, the Chinese ladies, are totally free from them; besides which, infants have been known to have striking excrescences. There is no doubt whatever that the pain and uneasiness attendant upon a corn are exacerbated by the pressure of a tight shoe, and that instantaneous relief attends a change; but this is easily explained. A new boot sometimes is said to have been the cause of the mischief, whereas the corn has not only long existed, but has formed for itself, in boots that have been worn, a cavity. We constantly find that those who live in towns are more subject to corns than those who live in the country, although the materials of which their boots and shoes are made are so much harder and rougher. It is not at all an uncommon thing for a person who has been afflicted with serious excrescences to lose them altogether whilst in the country, and again to be burthened with them on his return to London. The alteration of structure, wherever corns exist, is of the most decided character. No longer can it be considered as organized texture, for the laws of vitality have altogether ceased within its immediate range; vessels no longer circulate through it their normal fluid; nor does the rete mucosum furnish longer that mild lymph which lubricates the superior surface of the cutis vera, and the inferior surface of the epidermis, but in its place there is an exudation of a serous-like fluid, which rapidly hardens and thickens, layer accumulates upon layer, a corneous substance is formed, which gradually insinuates itself either amongst the muscular fibre, or the minute arterial vessels enter into the softer and spongier parts, assist in giving here and there vitality, and become the source of that exquisite pain which is often complained of by the sufferer." P. 15.

The preceding observations will make very little impression on our readers. The pathological remarks are too absurd to merit notice, and the character of the book will be understood when we state that the author magnifies the difficulties and dangers of removing corns by operation, and dwells on the disastrous and even fatal consequences of a badly-performed operation. On the subject of callosities, the author remarks:—

"It is a curious fact that those who ride on horse-back and are amongst the foremost in the chase, are strikingly liable to these affections. We have known men who are remarkable for their love of hunting, who have no other rural pursuit to which they are partial, who neither shoot nor fish, and who, when in town, take little but carriage exercise, suffer in a singular degree from hard, thickened, callous indurations around the heel, and they are not unfrequently exceedingly sensitive. The whole epidermis is in such cases unusually dry, ragged, and small papulæ in groups cover its surface; those who are advanced in years seem to be more subject to the rapid advance of these indurations, and they seldom can check them unless they have frequent recourse to the pediluvium of a high temperature, followed by rubbing the surface for some considerable length of time with a rough dry towel; indeed many persons have found their only relief from following this plan systematically for a considerable length of time, and even if they have abandoned it, from the total absence of the callosity, they have found it to return and to become even more troublesome than before." P. 126.

The following is the plan recommended for the treatment of warts :—

"The hydrochlorate of ammonia dissolved in water, and the hydrochlorate of lime are the most certain means of destroying them; the process, however, in both instances is very slow, and demands perseverance, for if discontinued before the proper time, no advantage is derived. The warts are to be kept constantly moist with the solution of one or other of these neutral salts, small folds of linen are to be soaked in it and applied at night, but this must be duly attended to. It must not be the practice for two or three days and then laid aside; it must be followed up for a month, at the end of which time it will be found that the excrescence no longer exists, and it will not again return. Success almost always follows upon this plan, and therefore it is the one I would urge as that upon which the greatest reliance can be placed. The most obstinate warts, that had baffled the attention of the most skilful, and that had re-appeared after other treatment, completely yielded to this; and since it has become under ordinary circumstances the plan I recommend to be pursued." P. 147.

Those who suffer from immoderate perspiration of the feet are recommended to use a solution of the chlorate of lime or of soda for its prevention, more especially if it be attended with any fætor, which sometimes occurs, but more generally as an indication of constitutional disorder than of local affection. The sponge, moistened with equal parts of camphor julep, of Mindererus' spirit, with a few drops of spirits of lavender, will often put a stop to the most disagreeable effluvium which arises.

The author treats chilblains on the feet with cold applications. He observes :—

"The production of cold, by the evaporation of ether, by the use of spirit, or the immediate application of ice, not only gives temporary relief, but permanent, if it be persevered in for some time; compresses, dipped in cold lotions, should be unremittingly kept upon the part affected until the redness, heat and swelling have disappeared. The warm fomentations, such as decoctions of poppies, of chamomile flowers, of turnips, are occasionally successful, but I by no means recommend them, for I have been uniformly successful in the removal of chilblains in their inflammatory stage by means of cold lotions." P. 188.

We must here conclude our notice of this work. It is scarcely deserving of even the brief attention we have given to it. The object of the author, it is too obvious, was that of making a book to serve the purpose of advertising himself, and we must express our regret that a distinguished physician should have sanctioned such a proceeding, by permitting his name to appear on the first page of a work of so questionable a character.

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THE COLD-WATER CURE, ITS USE AND MISUSE EXAMINED. By *Herbert Mayo*, M.D., F.R.S. 12mo. pp. 85. London, 1845.

HOWEVER pleased at hearing a medical brother's shattered health has undergone restoration, we can but regret that the same process has converted the *ci-devant* respectable surgeon of the Middlesex Hospital into the *doctor* of a hydropathic establishment. Any alliance of this kind inflicts disgrace upon the profession by imparting undue sanction to quackery. It is true Dr. Mayo is not an

implicit follower of the charlatan Priesnitz, and notices not a few instances of the evil resulting from indiscriminate employment of the various appliances. He believes that, by variations in the mode of application, very various results are produced, and that, to appreciate these, preliminary medical information is required. He desires to employ hydropathy co-operatively with other medical means, not exclusively!

"I do not adopt and use it without modifications which Priesnitz would repudiate as hostile to the spirit of his method. But I take its elements and employ them my own way. Perhaps, if the prescribed routine had suited my own case, I might have been misled by it. But my own case was too serious, and could not be cured by the system with its errors; it happened to require and admit of a part only of the routine treatment; and in following this view, and looking to see how much each individual case of serious disease requires, the system has disappeared, and in the place of the cold-water cure, I discern only a more extended and scientific use of cold-bathing."

Doubtless Priesnitz would assert that if the author had entirely, instead of partially, followed his system, he would have been by this time completely cured, instead of being as he is, only so in part. Having been for some years a victim of rheumatic gout, he repaired, at the advice of Sir J. Clark, to the hydropathists in 1842, and after douching, stewing, and sweating for a couple of years, feels himself much better, and thus winds up his account of his case, which we suppose is set down as a *cure!*

"In September I found myself almost suddenly much better; my feet and ankles, which up to this time had regularly by the evening become large and heavy, ceased to swell, and were hardly larger at night than in the morning; my knees at the same time became reduced in size, and I could stand every day, and most days could walk a few steps. *As I expected, I have since fallen back a little;* but I can now always stand without support on both legs, and I am confident that *next Summer I shall make the remaining step of walking.* In general strength I palpably improve every quarter of a year; the rheumatism burns out more slowly."

The various means at the command of the hydropathist may, according to our author, be made to operate in four different modes. 1. The *tonic* course, consisting of cold bathing, friction, and exercise, and cold water drank in moderation as a "*stomach bath.*" This is applicable to cases of general debility, feeble circulation, deficient innervation (as in hysteria and mental depression, certain forms of palsy, &c.,) threatening or incipient scrofula, muscular rheumatism, and regular gout in certain habits. 2. The *reductive* course, consisting in the induction of profuse sweating, "with just enough cold bathing afterwards to prevent the debilitating effects." This, according to Mr. Mayo, is seldom indicated, and he gives various examples of the evil resulting from its employment. 3. The *alterative* course. This is applicable to many cases, and consists in antagonizing the sweating and cold bathing processes, so as not on the one hand to reduce, or on the other to stimulate the patient; but, to give tone to his system by exciting a moderate action of the skin. Over-taxing of the bodily or mental powers, general disorder of the system, threatening head-disease, dyspepsia, irregular gout, or chronic rheumatism are cases for its use. 4. The *sedative* course consists in maintaining a prolonged application of cold water to prevent re-action taking place, and is applicable to cases of fever, inflammation, spasm, mental excitement, &c.

The conclusion we arrive at from the perusal of this pamphlet is, that there are various cases of dyspepsia and broken health, proceeding from gormandizing, idleness, anxiety, &c., which are greatly to be benefited by the change of air and scene which has been so long and so frequently recommended for them; and that, in some of these, the cold-water discipline might prove an useful auxiliary—provided it were administered under medical inspection. But we believe the

present rage for its adoption is dangerous in the extreme, and that while fancied ailments have been by its agency frequently converted into real diseases, and slight ones have been frequently rendered serious, not a few lives have been sacrificed at this new shrine of empiricism. The vast majority of diseases to which the system is applied are more easily and more safely curable without it; and if the rough practices it sanctions have worked a happy revolution in the constitutions of some old or young debauchees (which class constitute a large share of Priesnitz' patients,) more delicate frames, which, under judicious treatment, might often have been renovated, have succumbed to them. Again, therefore, we regret that any professional man, so well-known by his former labours as Mr. Mayo, should have given his sanction to practices so questionable in their therapeutical tendencies.

It must be a bad book that furnishes no useful hints; so, in parting with this one, we may inquire of our reader if he ever suffers from headache, defective digestion, or a slow action of the bowels. If so, let him seat his nether-end in a tub of cold water from five to thirty minutes, and the benefit he will thence derive, especially if he can command a rapid renewal of the fluid during the *seance*, will be surprisingly great. For ourselves, we are so liable to headache and weariness in pursuing some portion of our critical duties, that we feel grateful to the author for his panacea, and only regret that we were not in possession of it a little earlier, as we should like to have tried the experiment of reviewing "The Cold-water Cure" in a "Sitz-bath."

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**CONTRIBUTIONS TO THE MEDICAL HISTORY AND TREATMENT OF SEXUAL DISEASES.** By *John Hey Robertson*, M.D. Octavo, pp. 80. Glasgow, 1845.

THE first part of this *brochure*, treating of M. Ricord's practice in the Venereal Hospitals of Paris, was published by the author in a local journal as far back as 1833; and if he thought it worth while to reproduce it, he should have corrected its loose, rambling style, quite inexcusable in a re-print. Dr. Robertson is an enthusiastic admirer of the practice of *inoculation*, but yet inconsistently enough never employs it. He says—

"We have no means as yet of making an accurate diagnosis but by inoculation—but, since it can do the patients no harm, and may do them a great deal of good, there can be no reason why they should not submit to this very simple, and not in the least painful, process, equally for the surgeon's assistance, the benefit of science, and their own safety. (Notwithstanding this, I have never yet in this country done such a thing, *or even proposed it!*")

M. Ricord, however, inoculates in three places on the inside of each thigh in every case of suspicious sore or gonorrhœa, repeating the operation again and again if it fail. The healing of the original chancre takes place more quickly than when this practice is not adopted, the inoculated one also disappearing in a day or two afterwards. Sores on the glans or pudenda, which will not produce their like on inoculation, and which are very common, are termed *Herpetic* by M. Ricord. The *outrance* to which Mr. R. carries his opinions concerning the diagnostic value of inoculation is exhibited in one case, although not cited by the author to such end. A woman with sores was inoculated no less than ten times and in 60 places, without any effect whatever. The Professor, somewhat staggered at this at first, afterwards solved the difficulty by declaring "that he regarded this as a very extraordinary specimen of true syphilitic disease, as no less than a primary sore having passed into a secondary, without the constitutional affection!" M. Ricord having observed that *gonorrhœa* sometimes commu-

nicates chancre by inoculation, believes that cases of this disease, which are followed by secondary symptoms, are always those in which a chancre has existed in the urethra; and Dr. Robertson says that, before he was aware of this opinion, he had remarked that many gonorrhœal patients to whom he gave *pil. hyd.* as an alterative, but which must really have acted as an anti-syphilitic, got well very rapidly.

In his treatment of *Syphilis*, M. Ricord endeavours, if possible, to heal the sores without mercury, believing that secondary symptoms are then of less likely occurrence. Dr. Robertson, however, here seems to have lost faith in his instructor, for he says, "Indeed, notwithstanding this gentleman's expressed opinions, it is doubtful whether in this instance he believes them himself; for, in the course of some disputations with him one day, I suddenly put the question to him, 'How would he do in his own case?' The reply was *characteristic* (!) 'Ah! c'est une autre affaire.'" M. Ricord applies the *nitrate of silver* to the sore, giving mere ptisans the while. If, in a week or two, he finds no sign of healing, he prescribes the *proto-ioduret of mercury* in small doses, never continuing it long enough to affect the mouth—in older cases adding sarsaparilla, and ordering warm-baths.

For the treatment of *Gonorrhœa*, M. Ricord makes much use of injections, *lead* being the substance he prefers. He does not allow that stricture, hernia humoralis, &c., ever result from their employment. Dr. Robertson believes that *cubebs* seldom do any good, and sometimes cause violent irritation, requiring free leeching. Of *copaiba* he has not a much better opinion; and has found *ol. terebinth.* given in small doses the best medicine for oldish cases. It may be combined with *liquor potassæ*, or, if it purges, with opium. He seldom uses injections, and considers a week solution of *arg. nitr.* the best, and *cupri sulph.* the worst of these.

Dr. Robertson regrets that the *Speculum*, so constantly used in France, is so little employed here. It reveals the fact stated by Ricord,

"That, with hardly an exception, every woman who has gonorrhœa or whites, will be found to have abrasion, ulceration, herpes, or some other affection of the neck of the womb, or superior part of the vagina—generally the former—and that, though the gonorrhœa or whites may be removed, this disease found so far beyond the reach of the unassisted eye, and though it be unable to produce any sore by inoculation, yet possesses the property of producing discharge in man by connexion."

When the discharge is found to proceed from the os uteri, an iodine injection (Træ 3j. ad aq. ℥iv.) is to be employed. In mere *herpes*, not communicable by inoculation, rest, diet, and cleanliness suffice; but when there is abrasion or ulceration of the cervix, the red oxide of mercury, dissolved in nitric acid, forms the best application.

The second chapter of the work contains an account of the maltreatment of a case of secondary syphilis for one of rheumatism by the hydropathists, the patient eventually losing an arm in consequence of the formation of abscesses in the wrist. The author is however in error, in supposing that the water-doctors would have hesitated undertaking the case had they known it to be one of syphilis. Old pox cases form a large proportion of the Silesian peasant's *clientelle*.

The last paper, detailing two or three cases of spermatorrhœa resulting from onanism, might as well have been omitted, for any novelty it contains; and indeed we think the author might have been well contented with the medium which any of the weekly periodicals would have furnished him for the publication of the entire pamphlet. But then he would not have written his book.

I. THE RETROSPECT OF PRACTICAL MEDICINE AND SURGERY, &c. Edited by *W. Braithwaite*. Vol. XI. January—June, 1845. 8vo. pp. 335.

II. THE HALF-YEARLY ABSTRACT OF THE MEDICAL SCIENCES, &c. Edited by *W. H. Ranking*, M.D. &c. Vol. I. January—June, 1845. 8vo. pp. 391.

MUCH is done in the present day to render knowledge easy of acquisition, in Medicine as in other departments of science and literature. There are numerous weekly journals, recording the passing events of the day, containing too the reports of some admirable lectures, and stored with many useful communications from practitioners in all parts of the world. Besides these, there are not a few monthlies, whose communications aim to be of a higher and more elaborate character; and several quarterlies, which are devoted chiefly to the review and analysis of the more important works that issue from the press. As if these were not enough, we have now, in this country, two semestral periodicals, which profess to contain all the valuable pith and substance of the rest, skimming the cream from their surface, and selecting (what the editors consider to be) the wheat from the chaff. In this manner it is believed that the concentrated essence of the preceding six months' experience is expressed and obtained; the reader being thereby saved the trouble of gathering the information and distilling it for himself; on the same principle—to use a professional illustration—as the pharmaceutist finds it a most convenient method of preparing his "aquæ distillatæ" by rubbing up a few drops of an essential oil with water, in place of the more troublesome and tedious method recommended in the Pharmacopœia. But the question comes to be, is the medicament as good, when obtained in the one as in the other way? Is the aromatic and active principle in the first preparation equably diffused and incorporated with the mass of the liquid throughout? or is it not apt after a time to float upon the surface, the water beneath being then vapid and worthless? We must leave our pharmaceutic brethren to answer the question, and shall not presume to decide it ourselves. But of this we feel pretty well assured in reference to professional knowledge, that whatever is got up very quickly is seldom retained very long, or applied very skilfully. It has been said that there is no *royal* road to learning; is it not equally true that there is no *popular* one? This remark holds especially true in the study of medicine. Much that seems easy on paper will be found difficult of application in practice; and the physician will often feel himself perplexed by the very multitude of the really useful hints and recommendations, that are continually making their appearance in the pages of our journals, unless he has some leading principles to direct him, and has made himself thoroughly acquainted with the nature and real cause of diseases, as well as with their more obvious symptoms and the remedies that are usually employed for their relief. It is for this reason that it has always seemed to us that the careful study of two or three standard works, in the course of each twelve months, would be infinitely more serviceable in the long run to most medical men, than the skimming perusal of all the encyclographies and periodical digests that are published at home and abroad. The one course of reading will make a *sound*, the other may make a *ready*, practitioner.

Of the two publications, whose titles are prefixed to this notice, the first one has been before the profession for the last five or six years, and has met with very considerable encouragement. But Mr. Braithwaite, it would seem, is now not to have the field to himself; a competitor has made his appearance, and—rather strange to say—puts forth his claims to public favour as if his project was an entirely new one; he does not so much as deign to mention even the name of his predecessor. Is this quite fair and honourable? Why should Dr. Ranking, if confident of the superiority of his work, not boldly and manfully challenge a comparison with, not the *Jahrbuchers* of Germany and the *Encyclo-*

*graphies* of France and Belgium, to which he refers as his models, but with the *Retrospect* of a brother practitioner, not a hundred miles off? If merit is due to any one, for having proposed and carried into effect the idea of having a half-yearly abstract of the progress of medical science, it unquestionably belongs to Mr. Braithwaite: there can be no doubt, upon this point. Dr. Ranking's work, indeed, is one of higher pretensions than that of his predecessor, professing, as it does, to be not only a repertory of the most interesting communications in other journals, but also a review of new works; for he tells us in his Preface that "not only is every periodical of note published in Great Britain, America, France, and Germany subscribed for and personally consulted, but every standard publication and monograph which can be obtained is analysed, as it may come to hand." The *review* department, as a matter of course, is miserably jejune; on the one hand, there is no notice whatsoever of several of the ablest books that have been published, during the period embraced; and, on the other, the reader is introduced to an acquaintance with some works that have been perfectly well known to the reader for the preceding three or four months. We have an example of this in the case of Dr. Golding Bird's recent treatise on Urinary Deposits. While Mr. Braithwate very deliberately takes (with acknowledgment) about ten pages from *our* review of this valuable work—in the Number of the Medico-Chirurgical for April last,—Dr. Ranking proceeds in July to give a condensed analysis of its contents, being "convinced," he says, "that the brief summary, which we shall give, cannot fail to produce the desire for a perusal of the original work."

By far the best part of the Doctor's work is the latter half, containing semestral Reports on the progress of Medicine, Surgery, Midwifery, Anatomy and Physiology, Physiological and Pathological Chemistry, and of Forensic Medicine. Of these, the Report on Anatomy by an anonymous hand, and that on Chemistry by Dr. Day, are the most complete and elaborate. The selection of extracts, in the first half, is unquestionably not equal in point of value to that in Mr. Braithwaite's work. Would it not be better for Dr. Ranking to leave this department entirely to his predecessor, and devote his talents to the redaction of comprehensive reports on the different branches of medical science?—a task that would be very acceptable, and gratefully received, we doubt not, by the profession. Whether this hint be acted upon or not, we can have no hesitation in saying that the "Retrospect" will be the most useful to the practitioner, and the "Abstract" to the literary student.

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The Irish Watering Places, their Climate, Scenery, and Accomodations, &c. By *Alex. Knox*, M.D. 8vo. pp. 336. Dublin, 1845.

Dr. Knox was recommended, in consequence of protracted illness, to try the effects of continued travelling and change of scene. Instead of following the multitude to visit the spas of Germany, or the azure shores of the Mediterranean, he resolved to make a prolonged tour through his own deeply-interesting and romantic country. The result of his travels is the present volume, which we can confidently recommend to the reader as alike amusing and instructive. Dr. Knox has done good service to his native land by drawing public attention to its many valuable resources, in a hygienic and sanatory point of view. We trust that his meritorious labours will be appreciated, as they deserve, not only by his own fellow-countrymen, but by the profession generally throughout the kingdom, as an ably-executed design "to do for Ireland what has already been so amply accomplished for British and Continental Spas." Dr. Knox has received much assistance, in the execution of his work, from the communications of the medical men resident in the different localities which he visited. The most valuable of these is an elaborate report on the climate of Cove (near Cork) from Dr. Scott,

who has long enjoyed an extensive practice there. It is a most desirable locality for consumptive invalids; perhaps the very best in the United Kingdom. The report of Dr. Scott is well worthy of general perusal; we should gladly have extracted a large portion of it, had space permitted. We must therefore refer our readers, for information upon this and other points connected with the Irish Watering-places, to our author's work, which, besides strictly professional matters, contains a good many interesting geological and botanical details.

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Is RAILWAY TRAVELLING CONDUCIVE TO APOPLEXY? By *J. C. Badeley*, M.D. Small 8vo. pp. 16. London: Smith, Elder & Co. 1845.

HUSKISSON seems to have had a clear insight into the future, when he predicted that "England will ultimately resemble a large gridiron." The gridiron-mania had not then risen to such a pitch as it has now attained, and the apprehension of apoplexy is added to the long catalogue of broken bones and other dangers attendant on rail-road travelling.

We believe there are but two or three well-authenticated instances of apoplexy *taking place* in the train. Mr. Locksley had disease of the heart, and was long threatened with cerebral affection before his fatal journey with Sir Henry Halford. Lord Canterbury was also of a full plethoric habit for years before his death in the train. From long observation, and no small experience in rail-road travelling, we are convinced that there is little or nothing in the physiological action of the train either to predispose or to excite apoplexy. Gestation, or the passive exercise of the carriage, has a tendency to equalize the circulation, determine to the surface, promote the insensible perspiration, and consequently to dispel rather than promote local congestions, whether about the head or other parts. This is the opinion, clearly, of Dr. Badeley, whose sensible little brochure will tend to dispel the unfounded fears of railway travellers.

"The question is, whether there is anything in the act of being smoothly drawn along at a rapid rate that is calculated to cause it? We hear of death occurring from apoplexy 'in the stilly hour' of night, as well as in the bustle of the daily world—under circumstances of calm tranquillity, as well as of mental agitation or bodily exertion; and it would be difficult to prove that the crisis would not have occurred had the sufferer been in his study, or in his bed, instead of enjoying the itinerant luxury of a first-class carriage." P. 10.

There is one precaution, however, which we would recommend to railway travellers who have any disposition to vertigo or other affection of the head—it is to avoid looking at the *near objects* on the road-sides. These appear to fly along at so rapid a rate as to cause some degree of giddiness in particular constitutions, and the cause ought to be avoided by people of that description. We hope to see something of still more importance from the pen of the accomplished author of the present brochure.

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REGISTRATION OF THE CAUSES OF DEATH.

WE have received from the Registrar-General a book of blank forms for medical Certificates of the cause of Death, and also a circular letter addressed by him to all legally-qualified practitioners in England, requesting of them to use the printed form (in place of a written statement,) upon all occasions, filling up the blank spaces upon it to the best of their knowledge, so that as accurate a return as possible may be made of the most important circumstances connected with the death of each individual. Each Registrar is instructed to supply every medical man in his district with one of these books, which is similar to a banker's

checque book, and is exceedingly well suited for the purpose. By using it, much trouble is avoided, and far greater accuracy is insured. We therefore trust that every member of our profession throughout England will at once apply to the proper quarter for one of these books, and if he is not already provided with the "Statistical Nosology,"—that has been recommended for general adoption—he has only to send a written application to the General Register Office, Somerset House, and a copy will be forwarded free of expense. The Registrar-General deserves very great praise for the zeal and liberality that he has uniformly shown in the various arrangements of his office; and it only requires the hearty co-operation of the medical profession in supplying accurate information as to the cause of death, to collect together a vast amount of most interesting and useful knowledge on the important subject of Medical Statistics.

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## EXTRACTS FROM THE QUARTERLY MEDICAL AND SURGICAL JOURNAL FOR THE NORTH-WESTERN PROVINCES—FEVER, CHOLERA, DYSENTERY, &c.

IN our last number, we acknowledged the receipt of the first four numbers of this new Journal, published in the very heart of India, being printed at Delhi, by Kunniah Lall. The Editor's name is not given; but the great merit of the undertaking is obviously due to Dr. W. L. McGregor, surgeon of the 1st Bengal European Light Infantry. The first number is almost entirely written by him, and by far the largest part of the others is also from his pen. Each successive number is more valuable than its predecessor; and we are glad to find in the last one a very respectable list of subscribers' names, among the medical men throughout India.

The opening article of the first number, *on the close connexion between Fever*—the intermittent, and more particularly the bilious remittent, forms in tropical countries—*Cholera* and *Dysentery*,* contains many interesting and truly practical remarks. All these diseases are produced by the same morbific agent, Malaria; in all, the proximate or essential cause appears to be "a congestion of the biliary organs" (usually accompanied with a distended state of the gall-bladder,) the result of a general depression of the entire nervous power; and they should all be treated upon the same principles.

The stage of collapse in Cholera may be regarded as the cold or congestive stage (in its most intense degree) of a fever; and the great object of the physician ought therefore to be to bring on the subsequent stages of febrile reaction and of perspiration, as necessary to effect the recovery. Nature herself generally succeeds in removing the internal congestion at the commencement of a Fever, by the rigors that then take place; but in Cholera, the prostration is often so great, that she sinks under it without effecting the desired end.

In Dysentery, there is never the same degree of internal sanguineous congestion that we observe in Cholera and Fever; its chief danger consisting in the local inflammation of the bowels that is so generally present. Nevertheless, there is every reason to believe that, in the early stage of this disease also, the biliary organs are much engorged, and that the gall-bladder is distended with dark and viscid bile.

Nothing so effectually serves to counteract and remove visceral congestion as the action of Vomiting; and the medical man must therefore be most careful that he does not use any means to arrest too quickly this (so frequent) medicative effort of Nature, until the stomach be effectually cleansed, and the peripheral

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* Dr. M. adds *Rheumatism* to the list; but, as our remarks will apply chiefly to the others, we shall leave it out of our consideration at present.

circulation is in some degree restored. A vast deal of harm has been done in Cholera, more especially, by the injudicious administration of large doses of opium, and other sedatives, to stop at once the vomiting and purging, in the early stage of the disease.

Dr. McGregor remarks:—"In a recent case of Fever, when there is no headache, an emetic will often remove the congestion; when more severe, with headache and great heat of scalp, I give the following pill:—

℞. Ol. Crotonis Tiglii, gtt. v.
Extr. Hyosciami, gr. v.

If bile is present in the stomach, vomiting is generally produced;* and by this effect, and the free evacuation of the bowels, all the febrile symptoms subside, and apyrexia is obtained; in short, Congestion, or the essential cause, is removed. The next object is to strengthen the nervous system, without which the congestion will again occur, and the danger to the patient be increased; 10 grains of quinine are then to be administered, and, if the bowels have not been freely opened, the compound quinine mixture is to be given every hour, in addition to the dose of quinine; this mixture is as follows:—

℞. Sulph. quininæ, gr. xij.
Acid sulph. dil., dr. ½.
Sulph. magnesiæ, oz. ½
Aquæ, ℔ ½. M.

"An ounce every hour will answer, and this contains half a grain of quinine and half a drachm of salts; the latter may be omitted where the bowels have been freely purged by the croton, which is generally the case." P. 11.

Bleeding, blisters, turpentine enemata, calomel, &c., are required in particular cases, to remove particular symptoms.

*Dr. McGregor's Treatment of Cholera.*

Our author's favourite remedy—one which, he assures us, has scarcely ever failed in curing the disease, when timely and rightly administered—is Croton oil and (hill) opium; five drops of the former, and from three to five grains of the latter in each dose.

He says:—"If no blood can be obtained, I give the following draught immediately:—

℞. Croton, gtt. v.
Tinct. Hyosc., dr. j.
Opii (hill,) gr. v. M.

ut fiat haustus.

"If the spasms remain, and free vomiting does not succeed, the following pills are administered:—

℞. Mpii (hill,) gr. iij.
Ol. Croton, gtt. v. M.

ut fiat pil.

"If the symptoms continue, the pill is to be repeated (the mass may be made into two with bread crumb) until they subside, and *free vomiting* ensue, when the cold, clammy skin becomes warm and moist, and the tongue and expired air participate in the healthy change in general; nine grains of opium and fifteen drops of the oil, in repeated doses, will produce these effects; but in one case I gave 18 grains of opium and 27 drops of croton oil before the disease yielded, and it is satisfactory to learn, that in every case the treatment has been successful, where I have had the sole management of the case. To prevent a relapse, the use of quinine is advisable." P. 14.

Dr. McGregor, in a subsequent paper, relates several cases of Cholera suc-

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* Large doses of Croton oil almost always produce vomiting.

cessfully treated in this manner. In one, the patient took 45 drops of croton oil, and 39 grains of (hill) opium in the course of five hours!—he recovered. Allusion is made to another case, in which 35 drops of the oil were given in the course of one hour! As we have already said, this medicine acts as a powerful anti-congestive, by the vomiting and purging it produces;* while the opium serves to soothe the nervous system. Along with the treatment now recommended, saline or turpentine enemata, and blisters or turpentine epithems may be freely used.

*Dr. Jephson's Treatment of Cholera.*

This gentleman, in his account of the cholera at Sukkur in 1840, tells us that, after trying ineffectually the ordinary remedies—stimulants, calomel and opium, sinapisms, &c.—"he determined to pursue the same treatment as is usually followed in Ague;" being convinced that the two diseases were strictly analogous, alike in their symptoms and origin. Acting upon this impression, he had recourse to the exhibition of Emetics and neutral salts, "modified and combined with opium and stimulants in some of the stages." The results were very favourable. His usual formula was a mixture, consisting of an ounce of Epsom Salts, two grains of Tartar Emetic, and eight ounces of water: the dose one ounce every half-hour. After the third or fourth dose, the vomiting and purging often ceased. In some cases, the use of this mixture was preceded with an emetic of Ipecacuan. One or two large doses of Calomel, effervescing draughts, sinapisms, and turpentine epithems to the abdomen, were the adjuvants that seemed to be most useful: Quinine was generally given after the cholera symptoms had subsided. Opium appeared invariably to do mischief in the long run; it seemed to increase the tendency to a relapse. Dr. Jephson remarks, in reference to the *modus operandi* of his plan of treatment, that "it is not the simple effect of an emetic which is beneficial but it is the *sedative* influence of the saline tartar-emetic to which I attribute the benefit derived from its use."†

Dr. Anderson has related two cases in which very decided benefit was obtained from the use of saline enemata—composed of from half to one ounce of common salt, and one drachm of carbonate of soda in a pint of warm water—to be repeated every hour or oftener, until some decided effect is produced.

*On the Use of Nitrate of Silver in Chronic Dysentery.*

"The employment of lunar caustic as a component and active ingredient in

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* "In this disorder (Cholera,) vomiting is described as one of the symptoms: the action is not, however, vomiting, but an ineffectual attempt at the latter; and when the stomach is able to act freely, and remove its contents, the symptoms of Cholera disappear, and the congestion of the biliary system, or, in other terms, the essential cause of the disease is removed, and instead of the white congee stools, totally divested of bile, or fæculent matter, those containing both are speedily voided, and the body is thus restored to a state of health, and that from a disease which kills in a few hours!" P. 117.

† In illustration of this remark of Dr. Jephson as to the *sedative* influence of the tartar-emetic, we may adduce the following paragraph from one of Dr. McGregor's communications:—

• • • "Finding, in the case of cholera at Loodiannah, that the irritability of the stomach was only allayed effectually by six grains of hill opium, and the same quantity of tartar-emetic, he was ordered this dose; and at 1 P. M. the report stated, that he was asleep, having previously been purged, voiding a *dark stool;* this was the first change in the alvine dejections. The stomach, after this, became less irritable, and he retained sago and a portion of wine which he used as food, while the quinine and opium were given internally." P. 249.

enemata is well known, and its internal use has, likewise, been often witnessed in chronic dysentery, particularly the mercurial form, but the quantities employed in both ways have been generally too small. Combined with half a drachm of opium in the quantity of a scruple it forms a powerful and efficacious means of lessening one of the most common and painful symptoms in chronic dysentery, namely, tenesmus with pain in the rectum and verge of the anus. In such cases any large quantity of fluid will not be retained, but with two ounces of mucilage or milk this enema is often kept for twelve hours. Given internally it is advisable to combine the lunar caustic with opium, and the form of pill I generally employ is the following:—

℞. *Opii, gr.* xij.
*Nit. Argenti, gr.* ij.

*Pulv. Ipecac. gr.* vj.
*Ol. Caryophilli gtt.* vj.

Divide in Pil. vj.—One of these is to be given every second hour, and the effect is often wonderful; but the action of such a substance must be carefully watched, particularly on the stomach, though its effects on this organ are less marked than that of sulphas cupri, or sugar of lead, while its action on ulcers must be much more beneficial."

*On the Use of the Spleen in Disease.*

From a short paper on this subject by Dr. McGregor, we extract the following passage:—

"It is, therefore, in disease that we must look for the use of the Spleen, and it has been proved that, in a state of health, an animal can exist without it; while, in great diseases, such as *fevers*, it becomes an organ of the utmost importance in preventing congestion of vital parts, and it may be doubtful whether cases, which we look upon as slight in the form of plain *intermittents*, might not often terminate fatally, were it not for the existence of the spleen; such fevers require but little of our aid during a first paroxysm. Miasma, acting on the nervous system and lowering its tone, produces congestion; nature, to remove this, sets up the cold stage, and the re-action or febrile state causes a disturbance in the circulation which is prevented from causing fatal congestion and effusion within the skull, by the blood being accumulated in the spleen.

"This leads to an easy solution of the use of the lancet in both the cold and hot stages of Fever; in the former, it removes a portion of blood, and enables the heart to act on the remainder efficiently, so as at once to remove the congestion and prevent a paroxysm altogether; in the hot stage again, bleeding prevents the congestion or accumulation of blood in vital organs, such as the brain, liver and lungs. An *emetic* given early is often useful in removing the congestion, and thus preventing a paroxysm which is only set up for its removal; and to the action of *croton oil* on the stomach and bowels is to be attributed the beneficial effect following its exhibition in fever, cholera, &c."

*On the Medicinal Effects of Tobacco.*

Dr. McGregor is, on the whole, favourable to the moderate use of smoking in a hot climate, provided the person does not give way to the filthy, and quite unnecessary, habit of spitting. According to his observations, it is unquestionably a prophylactic, to a certain extent, of the malaria of Fevers and other infectious diseases. A patient can hardly be salivated, if he continues to smoke; a circumstance that clearly shows how powerfully Tobacco counteracts the effects of Mercury upon the system. Whether it exerts a similar influence on other active drugs, such as Iodine, Digitalis, &c., we do not know; but it seems likely. During the rainy season, flies are apt to deposit their ova on blistered and ulcerated surfaces, and numbers of larvæ or maggots are thus produced. The best means of destroying them is by covering the abraded surface with tobacco-leaves

moistened with water. In a curious case, where the larvæ appeared to occupy the *antrum maxillare*, Dr. M. found a decoction of Tobacco-leaves the only effectual means of removing them.—Moderate smoking of tobacco may be a useful preventive of Phthisis, as it unquestionably is of other pulmonic diseases. M. Simeon has recently noticed the unusual degree of immunity from Phthisical disease among the manufacturers of tobacco in France. In addition to smoking, the leaf might be applied to the chest.—The sleeplessness in Fever will sometimes be most effectually relieved by applying a moistened tobacco-leaf to the blistered surface of the scalp.

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MEMOIR ON THE FIELD CARRIAGE OF SICK AND WOUNDED SOLDIERS IN THE BENGAL ARMY. By J. *S. Login*, M. D., Surgeon to the British Residency at Lucknow, Superintendent of H. M. the King of Oude's Hospital, late Surgeon to the Commander-in-Chief in India, &c., &c. Printed at H. M. the King of Oude's Lithographic Press. Lucknow, 1844.

DR. LOGIN'S suggestions for the improvement of the field-carriage of sick and wounded soldiers are worthy of serious notice on the part of the Indian authorities, at home and abroad.

We can assure them of this truth, on no narrow view, and no small amount of personal experience. We say it without one feeling of unkindness, that all military men, but especially those who have been long at the desk, are, beyond any other set of men, wedded to system. We have served long enough to know the value of systematic arrangement in the conduct of an army :—we, therefore, honour system. It is against the abuse of system that we would appeal. We mean the abuse of it resulting from ignorance, inattention, and inexperience.

We have attentively perused the Memoir of Dr. Login, and we find much in it that ought to recommend it to the military authorities, and especially to those authorities who may be in superintendence over the Medical Department of the Army. Of late years we have heard much of inertness and inefficiency in the said superintendence; but we dare say that Sir Henry Hardinge has looked well to this business, and that, to stand the oldest man on the list, will not any longer be received as the exclusive Patent to the Medical Staff.

What would become of an army whose Staff were chosen on the seniority principle? Every one can answer such a question :—yet, not all the staff of an army is more essential to its welfare, than the Medical Staff to the Medical Department of an Army. "Everywhere, and for all things, there must be a head," says Napoleon—(he does not say *heads.*) We hope to hear better things of the HEADS of the Medical Departments of India. But, to return to Dr. Login.

His Memoir exhibits the cumbrous, costly, and inefficient state of the field carriage for the sick and wounded, now in use in Bengal. He proposes to substitute another which, he says, is light, easy of carriage, more comfortable to the soldier, and greatly cheaper.

Dr. Login has shown character, energy, and knowledge of his business in the field. He may be assured that, sooner or later, exertions like the present will receive their reward. Let him go on and prosper.

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EMPYEMA WITH PURULENT EXPECTORATION—RECOVERY.

IN the Fourth Number of the "British American Journal of Medical and Physical Science," edited by Dr. Archibald Hall, and published in Montreal, there is

a valuable contribution by Dr. Macdonnel on the Diagnosis of some Thoracic diseases. He relates a most interesting case of Empyema accompanied with copious purulent expectoration, although there were no signs of any abscess in the lungs; and in which the effused fluid was gradually absorbed by the efforts of nature, without any operation.

The chief object, which Dr. M. has in view, is to establish the truth of the following position.

"*That purulent expectoration in Empyema, though attended by a quick pulse, sweating, emaciation and other hectic symptoms, is not indicative of tubercular or pneumonic abscess, unless accompanied by unequivocal physical signs of these lesions; but, on the contrary, it is to be regarded as the consequence of an effort of the constitution to get rid of a large collection of matter by one of the ordinary emunctories.*"

In the case related by Dr. M., the patient was a girl 15 years of age, in whom the symptoms of thoracic effusion on the left side came on in consequence of a neglected cold. The sputa were at first frothy, but soon exhibited a purulent appearance, and had a very offensive odour. The breath too was offensive, especially after a fit of coughing. On the fourth day (March 9th) after admission into the hospital (three months or so from the commencement of the pleuritic symptoms,) "the quantity of pus expectorated amounted to about six ozs., in 24 hours; it was homogeneous and unmixed with mucus; its odour varied, at one time being very fætid, at another it was nearly without any smell; its colour was usually yellow, with a shade of light green." It deserves notice that the dyspnœa was very inconsiderable when the patient lay upon the affected side (indeed she could not lie in any other position;) nor did her countenance betray much anxiety. Her appetite too was pretty good; but she was apt to feel sick after each act of expectoration, in consequence of the fætor of the sputa. The treatment, that had been pursued, consisted at first in cupping and blistering the affected side, and giving frequently-repeated doses of the *muriate of Ammonia* and *Digitalis*. subsequently, small doses of *pil. Hydrarg.* and of the *potass. hydriodat.* were ordered. In the course of a short time, although the sputa continued to be purulent and fætid, they were certainly not so copious, and moreover there was a larger admixture of mucus with them. The size of the left side of the chest became decidedly less upon measurement, and the general health of the patient was improved. On the 30th of March, "a loud friction-sound, having all the character of the *leather-creak*" was distinctly perceptible, alike to hand and to the ear, about the root of the lung. The recovery in this instance was most complete; for over every part of both lungs, the sound elicited by percussion eventually became clear; and the respiratory murmur was everywhere loud and pure. There was not the slightest reason to suspect the existence of any tubercles in either lung.

The following remarks by Dr. Macdonnel, on the peculiar character of the Sputa in Empyema, are worthy of particular notice.

"The fætor of the expectoration, and its occasionally bad quality, have been so frequently observed in cases of this disease cured by the vicarious elimination of the pus from the bronchial tubes, that we are naturally led to inquire into the cause of the phenomenon. To me it appears explicable by the fact, that in such cases we have a quantity of pus and air occupying the minute tubes and air-cells, *and having but an imperfect communication with the external atmosphere, owing to the larger tubes being nearly obliterated by the compression to which the lung is subjected by the fluid of the empyema*, and in this way they act chemically on each other, and produce a decomposition, giving rise to the intolerable odour, which both the pus and the expired air soon acquire. In fact, the same phenomena are observed in these cases as in an ordinary abscess, the matter of which may be healthy and odourless on its being opened, but soon becomes altered in these respects when air enters the sac and acts upon its contents, which then become bad in quality and offensive in odour. This view is borne out by what was

noticed in Mr. M'Cullagh's case, viz., that the breath was not fetid during ordinary expiration, but became so immediately after coughing, by which the air *pent up in the remote tubes was expelled*, whilst that taken in, during ordinary inspiration, was exhaled devoid of odour."

There was a peculiar feature observed by Dr. M. in his patient, and which has not, as far as we know, been noticed in any similar case before;—viz., the presence of a loud *bruit de soufflet*, synchronous with the pulse, along the course of the thoracic descending aorta; it was distinctly perceptible along the left side of the spine, for the extent of about five inches upwards from the last rib. It was not possible to say how long this sound lasted; for it was only detected accidentally, and it disappeared as soon as the fluid in the pleural cavity began to diminish, as evinced by the decrease in the extent of dulness upon percussion.

[We gladly avail ourselves of the present opportunity of returning our best thanks to Dr. Hall for the first four numbers of his new Journal, and of expressing our most cordial wishes for its success. It is truly gratifying to us to receive communications from our brethren in every region of the globe, from the far West—

"Usque Auroram et Gangem;"

and we shall ever esteem it alike our pleasure and our privilege to be made the medium of converging the scattered rays of medical intelligence into one focus.)

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## CURIOUS CASE OF SIMULATED PARAPLEGIA; WITH REMARKS ON THIS DISEASE.

WE have received from Dr. Macloughlin of Paris a most interesting pamphlet, (2d Edition,) entitled "Consultation Medico-Legale sur quelques Signes de Paralysies vrais, et sur leur Valeur relative." The perusal of it has afforded us very true satisfaction; and we cannot but congratulate the author, as a talented physician, and a man of high and independent spirit, upon the complete success with which he has vindicated his character, not only from the malicious calumnies of a convicted impostor, but also from the unhandsome insinuations of a brother practitioner, M. Cruveilhier.

An English woman, of the name of Hardern, who had been previously convicted of simulating Ascites and Cancer of the womb by Dr. Macloughlin, applied to Dr. Mercier for a certificate stating that she was affected with a disease of the spinal marrow, the symptoms of which she managed to feign. The Doctor was not satisfied, and he therefore declined to give any certificate. Two days after this refusal, M. Cruveilhier was called to see her; and he, believing her statements, certified that "she was affected with complete Paraplegia, accompanied with palsy of the bladder." Her object in obtaining the certificate was to entitle her to assistance from a Benevolent Society in Paris for the relief of poor English people. Dr. Macloughlin was instructed by the Committee to visit her and ascertain the truth of her statements.

"The husband invited me," says Dr. M., "to do as M. Cruveilhier had done, by inserting needles into the flesh, and by pinching the skin. At the moment when she expected that I was going to use a needle, I merely tickled her; the member bounded up under my hand, evidently possessing all its sensibility and power of motion."

M. Cruveilhier, on being made acquainted with Dr. M.'s opinion, again visited the woman; and then not only re-asserted his former diagnosis, but added, that besides a complete Hemiplegia, there was also palsy of the right arm.

The Committee of the Society, being thus placed between two very discordant opinions, referred the case to MM. Andral and Sanson. These gentlemen drew up the following report:—

"The undersigned physicians, after having attentively examined the state of Madame———, have found as follows:—

The pupil of both eyes is sensible to light; that of the right side, however, less so than that of the left.

The movements of the tongue appear to be so much *gêné*, as not to allow the patient to articulate sounds.

In a state of repose, the angles of the mouth are not on an equal level, and the same is the case when they are in action; that of the right side is always either higher or lower than the other.

The right arm and the two lower extremities are flabby and without any life. The flesh is pale and soft; that of the right arm is softer and more flabby than that of the left.

A person may doubtless, though with great difficulty, simulate both a defect of parallelism between the two angles of the mouth, and the flaccidity of the extremities; *but, what cannot be simulated, is the irregularity between the pupils and the flaccidity of the flesh.*

Now, as it has been already said, the pupil of the right side is less contracted than that of the left, and the flesh of the right arm is softer and more flabby than that of the opposite member.

We may add that different means of producing, unawares, pain in the lower extremities, produced no apparent effect upon the patient.

From the preceding facts, the undersigned physicians think it right to testify that most of the symptoms experienced by Madame ——— are real, and that they depend upon upon a lesion of the nervous centres.

They add that her state appears to them most painful, and well deserving interest and compassion.

ANDRAL,
Paris, le 7 Janvier, 1839. SANSON.

P. S. As the patient admitted that she generally passed her water without difficulty, the bladder was not examined with the catheter."

In spite of this certificate, the Committee were of opinion that the woman was shamming, and accused both her and her husband of imposture, before the "procureur du roi." The man was sent to prison, and Dr. Ollivier d'Angers was ordered to visit the woman and make an official report upon her case. This physician, being unacquainted with the language (English) of his patient, allowed himself at first to believe in the reality of her alleged palsy:—"je ne peux que dire, *sans l'affirmer*, qu'elle presentait les signes d'une paralysie des membres inferieurs, du membre superieur droit, et de la langue." Subsequently, however, he made a more rigid examination of the case, and candidly admitted that he had been led into error, and that "he was now convinced of the simulation of the palsy." Here we must not omit to mention, that M. Ollivier did not discover any irregularity between the pupils of the two eyes, or that the muscles of the right arm were at all more flabby than those of the left one—as alleged by MM. Andral and Sanson only a week before—and yet it was upon those very two circumstances that these gentlemen chiefly based their diagnosis that the case was one of genuine palsy.

In August, 1839, (eight or nine months after his first examination.) Dr. Macloughlin, finding that the husband of the woman had been busy circulating various libels, in which the name of M. Cruveilhier was freely used, against him, called upon this gentleman to visit Mrs. Hardern again, and publicly to state his opinion of her case. After seeing her several times, he wrote a certificate, "*qu'elle est atteinte d'une paraplegie des plus completes.*" It will be observed, that no allusion is now made to the palsy of the bladder. On being applied to by Dr. M. for an explanation upon this point, M. Cruveilhier said that the state of the bladder had very little to do with the question whether there was, or was not, a *complete* Paraplegia; for he had seen many cases of *complete* Paraplegia,

in which the functions of the bladder and rectum remained quite intact. Dr. M. disputed this position, contending that, "if the bladder is not paralysed, the lower extremities cannot be *completely* paralysed. The experiments of all physiologists, and the observations of all pathological writers, tend to prove this."

Dr. M. finding that the man Hardern was still continuing his calumnies and had even placarded the walls of Paris with a foul libel against him, had him brought before the police court, which, being satisfied of his guilt, condemned him to imprisonment. He appealed to the Cour Royale; and, to Dr. M.'s great surprise, who should appear in defence of the prisoner, but M. Cruveilhier? This court, however, confirmed the sentence; and straightway M. Cruveilhier opened an asylum to the woman in the Hôpital de la Charité, where he delivered several lectures upon her case with the view of proving the accuracy of his own diagnosis! In February 1840, she was still in the hospital, her case being considered by M. C. to be "an organic lesion of the upper part of the spinal marrow," producing paralysis not only of the lower extremities, urinary bladder and rectum, but also of the right side of the cranium, tongue, and right arm. Dr. Macloughlin undertook to prove the fallacy of this diagnosis before all the students of the hospital. His exposition of the various circumstances of the patient's condition is very elaborately and ably drawn out; we can, however, only allude to a few particulars. Although the woman had been bed-ridden for more than twelve-months, there was no abrasion, nor even any redness on the skin of the back and hips. The state of the anal and urethral orifices, and of the woman's linen shewed that there was no incontinence of the rectum and bladder; and when a catheter was introduced, the urine flowed out steadily in a continuous stream, for at least three or four inches beyond the end of the instrument: the urine too was *acid and contained no mucosities.* The paralytic parts had lost none of their natural heat; there was no want of cutaneous transpiration, nor was there any tendency to exfoliation of the skin; the muscles were not flabby and atrophied; the fleshy points of the fingers were not wasted; and the pulse was not weaker in the paralytic than in the sound arm.

As a matter of course, in a case of suspected simulation of the loss of power and sensation in a limb, no prudent physician would attach much importance to the mere circumstance of a patient not wincing upon the skin being pinched or a needle being thrust into the flesh; yet, strange to say, M. Cruveilhier seems to have allowed himself to be deceived by this very common trick. Dr. Macloughlin wisely paid but little attention to this point, and we need not therefore notice it. His remarks upon another subject are so good that we are tempted to give them nearly entire.

"The first means, that we employed to shew that there was a voluntary movement in the muscles of the (alleged) palsied arm, was to rest the elbow on a hard surface, the hand being placed in a *supine* position. When left to itself, the hand gradually assumed that of *pronation.* This circumstance naturally suggested that the act was partly a voluntary one; but to make this the more apparent, we adopted the following plan. The elbow still resting on the hard surface, the hand being *supine*, we laid hold of the patient's right arm with our left hand, keeping the left thumb pressed upon the radius. After a few minutes, we distinctly felt the effort made to bring this bone round into the *prone* position; and this was so forcible that we had some difficulty in preventing the bone from rotation.* When the pressure was removed, the radius gradually revolved round, until the hand was in a state of pronation. To make the experiment still more conclusive, a weight was attached to the thumb, while the hand rested on a firm surface in a supine position. If the member is not paralysed, the thumb will

* In conducting this experiment, it will be well to divert the patient's attention from his hand, by engaging him in conversation upon other topics.

then, instead of remaining extended, become ere long bent, in order the better to support the affixed weight depending from it. Such proved to be the case on the present occasion. M. Cruveilhier, notwithstanding these phenomena, persisted in asserting that the right arm was paralytic!"

To test the condition of the lower extremities, one of the best plans is to make the patient lie flat upon his back, his hips just resting on the edge of the bed, while his legs hang down without reaching the ground. They are now to be gradually raised, by the little toes being laid hold of, to the horizontal line; and a slight traction should then be made on these toes, as if the operator wished to extend the leg, keeping the patient's attention diverted, as on the former occasion. If the limb is not paralytic, it will be found that gradually it begins to feel lighter in the hands; the patellæ at the same time become more salient, and the *vasti* and *rectus* muscles of the thigh swell out and are more prominent under the skin, without however exhibiting any convulsive movement.

Now, as all these appearances were observed in the case of Mrs. Hardern, Dr. M. did not hesitate to proclaim it to be one of feigned, and not of real, palsy.

That his opinion was from the first correct, we have not a doubt; and, if we ever had, it would be removed, as a matter of course, by learning that the woman was afterwards *proved* to have signed her name with her right (the palsied) hand to several letters, six months after the date of the controversy that took place between him and M. Cruveilhier in the wards of La Charité. It would seem also that the learned Professor had called several of his colleagues into consultation upon the case, but that they declined to join him in giving the patient a fresh certificate of her palsied condition.

The woman and her husband subsequently took themselves off to Italy, and, at the beginning of the present year, they were living in Naples; although M. Cruveilhier had, four years ago, predicted her speedy dissolution in consequence of an organic disease at the base of the Brain; and had also introduced, into the 35th part of his *Anatomie Pathologique*, a short history of the case, which, he says, had been "*meconnue par d'autres confrères.*"

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## NEW ANALYSIS OF THE SOUNDS OF THE HEART. By M. *Rouanet.*

IT is now upwards of twelve years since M. Rouanet propounded his views on this much disputed point; yet, strange to say, although these views have been canvassed by almost every subsequent writer on the subject of Cardiac Auscultation, and his theory has met with more favour than almost any other, this gentleman has never mingled in the discussion, until very recently, in drawing up a report on a work just published by M. Andry, and entitled "Manuel de Diagnostic." In this Report, M. Rouanet first examines the various objections that have been made to his theory, as well as the claims of other theories that have been proposed, and he then proceeds to give, what he considers to be, an explanation of the abnormal sounds of the Heart.

The question as to the healthy or natural sounds of the Heart has received more than thirty different solutions, all of them based upon four primary elements, either simple and isolated, or variously combined:—viz., 1, the muscular sound (myophonia;) 2, the friction of the blood; 3, its shock; and 4, the clicking of the valves.

We may assume it, as sufficiently proved, that neither the muscular sound, nor the friction of the blood against the orifices of the heart, nor the shock of the columns of the blood against each other, nor that of the blood against the walls of the heart, nor yet the impulse of this organ against the thoracic parietes, can afford any satisfactory explanation of the *tictac*. The arguments adduced by M. Rouanet may be deemed conclusive against each of these hypotheses. But he

would seem to be less fortunate in establishing his own views than in refuting those of others. He has proposed a very singular explanation of the metallic or silvery sound of the heart. "If," says he, "the *tragus* of the ear be smartly depressed upon the posterior wall of the external auditory passage, a portion of the air contained in this passage quickly escapes between the approximated surfaces, and produces a silvery *souffle*. What we thus obtain with so much facility by the direct action of the point of the finger, or by the percussion of the hand applied upon the ear, the heart effects in its energetic contractions, by raising the fifth intercostal space against the head of the auscultator. If, after having depressed the *tragus*, it is allowed to rise up quickly, a second *souffle* exactly resembling the preceding one, results from the re-entrance of the air into the passage of the ear."

It is at once obvious how M. Rouanet has been led to adopt this explanation. If the heart never leaves the thoracic parietes, but is always in contact with them, there can be no *shock*, only an *impulsion*; the impulsion, however strong it may be, can hardly account for the metallic sound; the cause of this sound does not reside in the thoracic parietes; it must be more superficial; and it is then that M. Rouanet imagines this depression of the *tragus* against the posterior wall of the auditory passage.

A host of objections might be urged against such an explanation. Passing by any allusion to the *gastric tinnitus*, of which the author had previously treated, and which is not, properly speaking, a metallic sound, the heart may still give out two sorts of silvery sound. One is a sort of *frôlement*, or grazing murmur, prolonged during a part of the systole, or of the diastole; the other consists in a dry and instantaneous sound. These two sounds are so very different in their nature that they cannot possibly be produced by absolutely identical conditions. M. Rouanet, who only speaks of the *frôlement*, compares it to the sound produced by the point of the finger being introduced into the auditory passage, or to that which follows the percussion of the hand applied over the ear. Now, the least experience will suffice to shew that these are dissimilar sounds; for the first resembles a kind of clear-toned *souffle* that is slightly sibilant, whereas the second is brusque, instantaneous and truly metallic. M. Rouanet believes that these two sounds are produced by an analogous mechanism, and that this consists in a rapid current of air at the entrance of the ear; he supposes that the percussion of the hand applied upon the ear depresses the tragus, and expels the air from the auditory passage, just in the same manner as the extremity of the finger does by diminishing the capacity of this passage; and that this is the cause of the metallic sound.

Now there are a thousand ways of shewing that this supposition is erroneous. For example, instead of one hand being placed flat upon the ear, let two, three, or four be applied, and slightly struck in such a manner that the shock is not felt in the vestibule of the ear; the *tragus*, certainly, will not have been "refoulé," and yet the sound produced will be found to be perfectly metallic. Better still, either apply your left hand over the ear, and strike the olecranon of the same side, or place your ear flat upon any part of the chest of a person, and strike at some distance, and you will always obtain the same silvery sound. In all these experiments, the sound produced is identical with that one of the two metallic sounds of the heart, which we have said is dry and instantaneous: it differs, on the contrary, totally from the other sound which we have described as having a *grazing* character, (frôlement). Thus, then, the mediate or immediate shock of the thoracic parietes is really the condition which produces one of the two metallic sounds of the heart; and the depression of the *tragus* absolutely goes for nothing. But, it may be asked, can this depression be appealed to, to explain the silvery *frôlement*? We think not; for, besides that the sound, which is produced at will in this manner, has really nothing silvery in it, the *frôlement*, as well as the sound of the shock, may be heard in many circumstances where

the *tragus* receives no impulsion whatsoever. Repeat all the experiments previously mentioned, substituting only for the shock a slight friction; for example, rub softly; either the hand applied upon the ear or the olecranon of the same side, and you will obtain a most decided metallic *frôlement*, so that we cannot for a moment doubt that the friction of the heart against the thoracic parietes is the cause of the grazing sound, which is occasionally perceptible in disease; and that a shock against the same parietes is the cause of the other dryer sound of which we first spoke.

M. Rouanet dwells with much emphasis on the facility with which the "dedoublement" of the physiological cardiac sounds—a phenomenon so puzzling to the theories of muscular bruit, shock, or friction—can be accounted for by his, the valvular, theory. It is quite easy to understand how—notwithstanding the most perfect synchronism in the movements of the two halves of the heart—the corresponding valves of the two sides may not, in consequence of some disturbance of their normal play, be opened and shut at the same moment of time: this circumstance alone might incline one to account for the "dedoublement" of the sounds in this way, and, in short, to admit the truth of M. Rouanet's theory *in toto*. And yet we must frankly acknowledge that we are by no means satisfied, that the cause of the first sound is fairly made out. The English experimenters agree with M. Rouanet as to the cause of the first sound, but not as to that of the second one. We know that MM. Cruveilhier and Monod found that the auriculo-ventricular valves were silent (aphones) in a very remarkable case of congenital malformation, where the heart of a new-born child was naked and exposed; and the result of our own clinical observations has been to satisfy us that these valves have little or nothing to do with the production of the cardiac sounds in a state of health. Upon this point, it must be confessed that science still stands in need of more than one element of solution.

One word more as to the explanation which M. Rouanet gives of the blowing sounds of the heart and arteries. According to him, they should all be referred to the vibration of the blood. This vibration takes place every time that the blood forms a whirling eddy, and the blood eddies in this manner whenever it passes from a narrow canal into one that is larger, provided it be propelled with great rapidity. In this simple manner, M. Rouanet explains all the varieties of the blowing sound, from the simple *souffle* to the musical *souffle*, and all the well-known caprices of the chlorotic *souffle*. The ingenuity, with which these ideas are supported, gives them a great appearance of probability; but it must be regretted that they had not been submitted to the test of experiment. More than once, it has seemed to us that a simple and easy experiment would immediately have demonstrated what the author contents himself with simply asserting. The fundamental idea itself, that of the whirling eddies of the blood considered as causes of the blowing sounds, was susceptible of this kind of demonstration. Thus many objections might have been obviated, which the mind, when left to mere reasoning, is apt to suggest. It may be asked, for example, why the blood, in entering into the ventricles, and in passing out from them, does not normally give place to a double blowing sound. "It is," says M. Rouanet, "because the sanguineous current in health is not sufficiently accelerated to render the vibrations of the blood appreciable." But what takes place in fever? What follows after quick running? Then the heart often beats 100, 110, 120, 130 times a minute, without (except in the case of organic malady or of chlorosis) the blowing sound being heard. Nevertheless we repeat that we do not absolutely reject the explanation of M. Rouanet; it even seems to us to give a better account of the phenomena than any other; we only regret that it is not based upon less disputable foundations. He will, no doubt, excuse this remark of our's, seeing that it only arises from our conviction of the great benefit that science would derive from experimental researches undertaken in this path by the ingenious author of the Valvular Theory.

M. Dechambre—the author of the preceding remarks—concludes them with the following *petite reclamation* :—

" M. Rouanet, after stating that the retardation of the circulation in old people prevents certain lesions of the valves of the heart from giving rise to any blowing sounds, adds these words ; ' *Voilà pourquoi* the objections of MM. Piorry and Dechambre are without much value.' Objections to what?—As far as regards me, I have never written a single word of controversy upon the point in question ; all that I ever did was to communicate to M. Piorry the summary of some cases in which I had found on dissection contraction of the cardiac valves, although there had been no abnormal sounds discoverable during life. These facts M. Rouanet admits as well as myself ; and, on my part, I quite agree with him that the retardation of the circulation is sufficient to prevent a valvular contraction from giving rise to the characteristic *souffle*."—*Gazette Medicale, No.* 28.

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## M. Parchappe on the Sounds of the Heart.

During the course of last year, a Treatise, entitled " *Du Cœur, de sa Structure, et de ses Mouvemens*," was published by M. Parchappe. According to the report of the *Gazette Medicale*, the work contains a good deal of interesting matter on the Anatomy and Physiology of the Heart. We select the closing paragraph of the review :—

" A fact independent of all doctrines, and one that is very important in itself, has been particularly noticed by this author. It is well known that physicians are not at all agreed among themselves upon the question, whether the normal cardiac sounds continue to be perceived, when the heart of an animal is laid bare and taken out of the chest. M. Parchappe, on this as in the other problems which he has examined, adduces not merely an opinion, but the direct result of his observations. ' I can affirm,' he says, ' that the *tic-tac*, so clearly perceived by the mediate auscultation of the heart in the rabbit, has entirely ceased to be perceptible by me every time I have applied the stethoscope to the heart when laid bare, at a moment when, its movements still continuing to be produced, the circulation of the blood through its cavaties had ceased. And I can also assert that the stethoscope, applied to the heart of the rabbit taken from the chest, placed upon a table and still contracting with sufficient force to give to the ear a distinct sensation of rising or heaving, has never enabled me to discover any sound.' "

We could multiply these extracts, without their ceasing to preserve the same character of conscientious and profound observation. But we must refrain ; and leave the reader free to study in the text these documents which will rank henceforth among the most useful materials for a complete anatomical and physiological history of the heart.

(*Remarks.*—After all the experiments that have been performed, and all the long-drawn, and often too most angry, controversies that have taken place, in this and other countries, on the subject of the ætiology of the normal sounds of the Heart, it must be confessed that the question still remains undecided. Our only motive for alluding to the matter at present is again (for this is not the first or second time that we have spoken out) to enter our protest against the repetition of those barbarous experiments on living animals, the performance of which is so disgraceful, upon the whole, to the medical profession. And what good have they done?—literally none. We verily believe that there would have been much more rational views on this, as well as upon many other disputed questions in physiology, if observation had been exclusively confined to noticing the natural and spontaneous phenomena of life in health and disease, and diligently ex-

amining after death the effects which disease leaves behind. Shall we believe that any conclusion, worth knowing, can be drawn from cutting a poor animal's heart out of its body and applying a stethoscope to its surface? Away with such butcher-like philosophy!—*Rev.*)

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ON CATARACT, AND ITS APPROPRIATE TREATMENT. By *Charles G. Guthrie*, Assistant-Surgeon to the Royal Westminster Ophthalmic Hospital. 8vo. pp. 127. 1845.

WE had hoped to have found room in the present number for a review of this and several other books which call for notice. Among these we may more especially mention "Coles on Spinal Affections, and the prone system of treating them," (a work that contains many most judicious observations), "Klencke's Contagiosität der Eingeweidewürmer," "Simon's Animal Chemistry," &c., &c.

All that we can now do is very briefly to call attention to Mr. Guthrie's work, which, although it might easily have been much improved, may be read with very considerable advantage by medical men.

*Symptoms of Cataract.*

"When idiopathic cataract is about to take place, the patient usually complains of a little weakness of sight, or rather, that it becomes indistinct, or confused, and a greater degree of attention is required to fix and distinguish objects accurately. They appear as if seen through a thin mist, or a semi-transparent turbid fluid, or through a glass which is dirty or dull. This indistinctness of vision is constant. No change or motion of the head, or rubbing of the eye improves the sight, whilst the patient remains exposed to the same degree of light; but if the room be darkened, the vision is in some cases considerably improved. The patient is frequently seen to place his hand on a line with the eyebrow, or what is termed shading the eye from the light, under which circumstances the pupil is dilated, and objects are seen more distinctly. The improvement takes place only in persons who are suffering from lenticular cataract, and particularly in those in whom the opacity commences in the centre of the lens. The advantage is gradually lost as the pupil contracts, or is exposed to a greater light; in which case he is obliged to bring every object nearer to his eye, whilst it is often more readily seen from one side, than when placed in the axis of vision." P. 7.

There is often no little difficulty in *distinguishing incipient Cataract*, before the opacity can be perceived, *from amaurotic weakness*.

"Vision, in incipient amaurosis, is not improved by the use of spectacles, or by the application of belladonna, which rather increases the defect, and the sufferer usually sees better under an increase of light; for instance at noon-day, when the rays of light are brighter, or if he reads by candle-light, he throws a strong light upon the book, and even then brings it nearer to the eye. Incipient amaurosis is sometimes, however, accompanied by increase of sensibility of the external parts, and then a strong light distresses the patient, who can only see when it is carefully moderated. The flame of a bright lamp thus seen, is usually more or less coloured or variegated, blue, yellow, or red, like the rays observable in a rainbow, or more broken and confused, whilst in incipient cataract, the flame of the lamp seems to be surrounded only by a whiter mist of milder light, and which appears to make objects larger than they really are. Flashes of light, or white and brilliant circles, or luminous spots, are equally indicative of amaurosis, more particularly if seen when the eye is closed during the night, and the patients in whom these symptoms occur, usually suffer from headache and pain, especially in the forehead and over the eye, or from giddiness, symptoms which are not common accompaniments of incipient cataract." P. 25.

Many medical men believe that the Iris is always motionless—at least to a

considerable degree—in complete Amaurosis: this is far from being uniformly the case. In many instances, where vision has been entirely lost from a defect in the retina or in the optic nerve, the pupils will be found to contract and dilate under the influence of light. The reverse of this is also true; for the iris may lose its contractility, while the retina retains its sensibility. Mr. Guthrie says that "the healthy state of the Iris is *generally* a good, although not an unerring, index of the healthy state of the Retina; whilst a diseased state or loss of function of the Iris by no means indicates, although it may lead to a suspicion of, a diseased state of the Retina."

## BIBLIOGRAPHICAL RECORD.

1. Report of the Amount of the Causes of Death in Manchester. By JOHN ROBERTSON, Surgeon. 8vo, pp. 23. London, 1845.

2. Letters on the Unhealthy Condition of the Lower Class of Dwellings, especially in large Towns. By the Rev. CHARLES GIRDLESTONE, A.M. 8vo, pp. 104. London, 1845.

3. The Retrospect of Practical Medicine and Surgery. Vol. XI. Jan. to June, 1845. By WILLIAM BRAITHWAITE. 12mo, pp. 342. London.

4. On the Nature, Causes, Prevention, and Treatment of Acute Hydrocephalus, or Water Brain Fever. By THOS. SMITH, A.M. M.D. Small 8vo, pp. 177. London, 1845.

5. The Cold Water Cure, its use and misuse examined. By HERBERT MAYO, M.D., F.R.S. Fc. 8vo, pp. 94. London, 1845.

6. The Chemistry of Vegetable and Animal Physiology. By Dr. G. F. MULDER, translated by Dr. P. F. H. TROMBERG, with an Introduction and Notes, by JAMES F.W. JOHNSTONE. London, 1845. Part 2.

7. Surgical and Practical Observations on the Diseases of the Human Foot, with Instruction for their Treatment, to which is added, Advice on the Management of the Hand. By JOHN EISENBERG. 4to. pp. 252. London, 1845.

8. The Half-yearly Abstract of Medical Science, being a Practical and Analytical Digest of the contents of the principal British and Continental Medical Works published in the preceding six Months. Edited by W. H. RANKING, M.D. Vol. 1, Jan. to June, 8vo, pp. 390. London, 1845.

9. Cosmos—a Survey of the General Physical History of the Universe. By ALEXANDER VON HUMBOLDT. Parts 1 & 2. London, 1845.

*A work of the highest scientific merit: we shall notice it at greater length when completed.*

10. The British American Journal of Medical and Physical Science. Edited by A. HALL, M.D. Nos. 1, 2, 3, 4. Montreal, 1845.

11. On Growth or Health and Diseases of Youth. By A. M. BUREAUD RIOFREY, M.D. 8vo, pp. 163. 1845.

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12. Some Observations on Organic Alterations of the Heart, and particularly on the beneficial Employment of Iron in the treatment of such Cases. By S. SCOTT ALISON, M.D. Fc. 8vo, pp. 62. London, 1845.

13. Lectures on the Theory and Practice of Surgery. By the late ABRAHAM COLLES, M.D. Edited by SIMON M'COY. 2 Vols. 12mo. London, 1845.

14. On Diseases of the Liver. By GEO. BUDD, M.D., F.R.S. 8vo, pp. 401. London, 1845.

15. A Practical Treatise on Inflammation, Ulceration, and Induration of the Neck of the Uterus, with remarks on the value of Leucorrhœa, and Prolapsus Uteri as symptoms of Uterine Disease. By JAMES HENRY BENNETT, M.D. 8vo, pp. 212. London, 1845.

16. A Treatise on the Diseases and Special Hygiene of Females. By COLOMBAT

DE L'ISERE. Translated from the French by CHARLES D. MEIGS, M.D. 8vo, pp. 719. Philadelphia.

17. On the Nature and Treatment of Gout. By W. H. ROBERTSON, M.D. 8vo, pp. 380. London, 1845.

18. The Naturalist's Library. By Sir WM. JARDINE, Bart. With numerous col. plates, People's Edition, Parts 1 to 5. Highley. London, 1845.

*An exceedingly neat reprint of a most useful and engaging work. It is one of the very best of the "People's Editions:" the excellent letter-press and twelve beautifully coloured engravings for sixteen-pence! The work should be in every good school throughout the kingdom.*

19. A System of Surgery. By J. M. CHELIUS. Translated from the German, with Notes and Observations, by J. F. SOUTH. Parts 3, 4, and 5. London, 1845.

20. The American Journal of the Medical Sciences. Edited by ISAAC HAYS, M.D. July 1845. Philadelphia.

21. History of the British Freshwater Algæ, including descriptions of the Desmideæ and Diatomaceæ, with upwards of one hundred Plates, illustrating the various species. By A. H. HASSALL, F.L.S. 2 vols. 8vo. Highley. London, 1845.

22. The American Journal of Insanity. Edited by the Officers of the New York State Lunatic Asylum, Utica. April and July, 1845.

23. Examination of the Views adopted by Liebig on the Nutrition of Plants. By WM. SELLER, M.D. Edinburgh, 1845.

24. The Medical Examiner and Record of Medical Science. By R. M. HUSTON, M.D. Parts 5, 6, 7, and 8, 1845. Philadelphia.

25. The New York Journal of Medicine and the Collateral Sciences. By C. A. LEE, M.D. July, 1845. New York.

26. Fruits and Farinacea, the proper Food for Man; being an attempt to prove from History, Anatomy, Physiology and Chemistry, that the original, natural, and best Diet for Man is derived from the Vegetable Kingdom. By JOHN SMITH. Small 8vo, pp. 445. London, 1845.

27. Annales de la Chirurgie Française et Etrangère. May, 1845. Paris, Bailliere, 1845.

28. The History of the Middlesex Hospital during the first century of its existence —compiled from the Hospital Records. By ERASMUS WILSON, F.R.S. 8vo., pp. 296. London, 1845.

29. Elements of Chemical Analysis, Qualitative and Quantitative. By EDWARD ANDREW PARNELL. 8vo., pp. 520. 2nd Edition. London, 1845.

30. The Pharmaceutical Latin Grammar. By ARNOLD JAMES COOLEY. 12mo, pp. 132. 1845.

*Calculated to be very useful to Medical Students.*

31. Medicina Gymnastica. By CHARLES EHRENHOFF. 8vo., pp. 18.

32. Lettre sur la Syphilis. Par F. L. RATIER. 8vo., pp. 68.

33. The Human Female Ovary. By FRANK RENAUD, M.D. 8vo., pp. 20.

34. Forty-ninth Report on the Friends' Retreat, near York. 1845.

35. Fifteenth Report of the Belfast Asylum. 1845.

36. Medical and Physiological Problems By WM. GRIFFIN, M.D., and DANIEL GRIFFIN, M.D. 8vo., pp. 360. 1845.

37. Dr. Copland's Dictionary of Practical Medicine. Part X. 1845.

38. A View of the Formation, Discipline and Economy of Armies. By the late Rev. JACKSON, M.D. With a Memoir of his Life and Services. 8vo, pp. 425. 1845.

39. Traité des Angusties ou Retrecissements de l'Urètre, leur traitement rationnel. Par le Dr. LEROY D'ETIOLLES. Paris, 1845.

40. Consultation Medico-legale sur quelques signes de Paralysies vraies, et sur leur valeur relative. Par M. MACLOUGHLIN, D.M. 2me Edition. Paris, 1845.

41. The Veterinarian. Numbers for July, August, and September.

42. The St. Louis Medical and Surgical Journal. Edited by Drs. LINTON and MCPHEETERS. July, 1845.

43. Tight-lacing and its Consequences, By H. WHITFIELD, M.R.C.S. Pp. 22. 1845.

*May be read with advantage by the public.*

44. Annual Report of the Medical College of Bengal. Session 1844–5.

*This Report gives a very encouraging account of the progress of medical education in Bengal.*

## EXTRA-LIMITES.

### TESTIMONIAL TO J. R. MARTIN, Esq.

To Colonel James Young, Dr. A. R. Jackson,
and John Turner, Esq., Surgeon.

GENTLEMEN,

Enclosed I have the honor to hand to you a Bill, drawn by the Union Bank Secretary upon their London correspondents at ten months date, for the sum of £250, payable to Mr. J. R. Martin, or order.

If you will take the trouble to peruse the accompanying extracts from the public papers here of dates 31st July and 13th November last, you will understand that this money has been contributed by a number of Medical Officers of the E. I. Co.'s Service in Bengal, (in sums averaging one gold mohur each,) and that the object of the subscribers is to present to their quondam colleague, Mr. J. R. Martin, a handsome piece of plate, commemorative of their personal respect and obligations to him for his exertions to procure an improved scale of pensions.

I am desired by the contributors to request that you will do them the favor to communicate these their wishes in suitable terms to Mr. Martin, and that you will farther be good enough (in concert with him,) to select an appropriate piece of Plate, from the workshop of Messrs. Green and Ward, bearing the inscription adopted unanimously at the Meeting.

A corrected list of the Subscribers will be forwarded by the next mail. It is possible that there may be some few additions to their number in India, but we cannot doubt that those members of the Service now at home will take the opportunity of joining in the Testimonial, if they are made aware by any means of the steps taken here, and from these sources it is hoped the subscription may amount to £300 altogether.

I have the honor to be,
Gentlemen,
Your Obedient Servant,
(Signed) A. GARDEN,
*Calcutta, 7th January*, 1845. *Chairman of Committee.*

---

*Calcutta, November 18th*, 1844.

THE MARTIN TESTIMONIAL.

The Meeting of the Subscribers to the Martin Testimonial was held yesterday evening, in the Town Hall, when Dr. A. Garden was in the Chair. After the reading of a Report, by Dr. Duncan Stewart, the following Resolutions were unanimously adopted :—

Proposed by Dr. Jackson, and seconded by Dr. W. B. O'Shaughnessy and resolved,

1st. That the Report is satisfactory, and be published in the daily papers.

Proposed by Dr. A. Smith, and seconded by Dr. Finch.

2d. That it is the opinion of this Meeting, that the most appropriate form of Testimonial will be that of one massive piece of Plate, with a suitable inscription.

Proposed by Dr. Goodeve, and seconded by R. O'Shaughnessy, Esq.

3d. That the following inscription be thereon engraved!—"Presented to James Ranald Martin, Esquire, late of the E. I. Co.'s Bengal Medical Service, by his brother Officers. in token of their personal regard, and their obligations to him for his successful exertions in procuring for them the improved scale of pensions after 21 years' service."

Proposed by Dr. Jackson, and seconded by Mr. Egerton,

4th. That Colonel Young, Mr. John Turner, and Dr. A. R. Jackson be requested to see the above Resolution carried into effect (by Messrs. Green and Ward of London,) in communication with Mr. Martin.

Proposed by Dr. D. Stewart, and seconded by Dr. Garden,

5th. That a complete list of contributors and of payments up to the present time be again published, and that the subscription book remain open till 1st January, 1845.

Proposed by Mr. Egerton, and seconded by Dr. Smith,

That the thanks of the Meeting are due to the Chairman.

---

To Colonel James Young, John Turner, Esq., and A. R. Jackson, Esq., M. D.

GENTLEMEN,

I have had the honor to receive, through you, the letter of Dr. Garden, Chairman of the Committee of Medical Officers of the Bengal Army, of 7th January, 1845, together with copies of resolutions adopted by my late brother officers at a Meeting held on the 13th November, 1844, at the Town Hall of Calcutta.

The third Resolution conveys to me, on their part, the expression of "their personal regard, and of their obligation to me for my successful exertions in procuring for them the improved scale of pensions, after twenty-one years' service:" and, by another resolution, I am presented with a "massive piece of plate," in token of the sense entertained by the subscribers, of these my exertions.

It is not possible for me, gentlemen, to express in adequate terms the feelings with which I receive this testimony of the esteem and good will of those officers—many of them my best friends—with whom I served during the better part of my life. I can only say, that I accept it as one of the most gratifying and honorable rewards that I could receive from any quarter; and that I shall ever esteem this expression of "the personal regard" of my brother officers as one of the most pleasing circumstances of my life.

In regard to the improved scale of pensions recently accorded to the Medical Departments of India, I may be permitted to say, that, owing to

circumstances of a personal nature, I was enabled to secure access to persons in authority, and I was thus enabled to urge forward this important question. I did so during three years, on the score of its justice—on that of its substantive value—and with a view to set aside one of those relative distinctions which I believed to be injurious to the interests of the public service at large. That my exertions should prove acceptable to the Medical Department of the Bengal Army especially, would alone have been to me a sufficient reward, and I looked to none besides.

While I request that you will do me the favor to convey these my sentiments of esteem and grateful regard to Dr. Garden, and to the numerous body of my brother officers whom he represents, I beg, at the same time to offer to you, Gentlemen, the expression of my sincere thanks for the handsome and friendly terms in which you have been pleased personally to convey to me this most flattering testimonial.

I have the honor to be,
Gentlemen,
Your faithful and obedient Servant,
(Signed) J. R. MARTIN.

*Grosvenor Street, London, March* 12, 1845.

---

*London, March* 17th, 1845.

To Dr. A. Garden, Chairman to the "Martin Testimonial" Committee, Calcutta.

SIR,

Almost immediately on receiving your letter of instructions regarding the Martin Testimonial, and conveying a remittance of £250, one of our members, Col. Young, in order to save a mail, took upon himself to address you a separate letter, acknowledging receipt, and reporting progress, so far. In continuation of that letter, we have now the honor more formally to apprize you of our proceedings towards completing the execution of your Committee's instructions, and in furtherance of the noble design contemplated by the Medical Body of Bengal.

We accordingly have the pleasure now to enclose Mr. Martin's reply to our communication, which we doubt not will be gratifying to his "brother officers."

The Bill for £250, after presentation and acceptance, was handed over to Mr. Martin, who accompanied our colleague, Mr. Turner, to Messrs. Green and Ward's, and made choice of an appropriate and handsome piece of plate, on which the prescribed Inscription is now being engraved.

In reference to the concluding paragraph of your letter, in which you suggest that the Medical Officers now at home should be referred to, with a view to afford them an opportunity of contributing to this testimonial, we beg to state that we were about to take steps to that effect, when, at the personal request of Mr. Martin, we desisted, and have relinquished the intention altogether.

In a formal Report such as this, of proceedings in a public matter, we ought not, perhaps, to obtrude any mention of ourselves or our feelings; yet, we have all of us been so long acquainted with the eminent professional and public character of Mr. Martin, besides being personally and

familiarly intimate with that excellent and amiable man, that we really feel indebted to your Committee for having selected us to perform the pleasing office of communicating to our esteemed friend the gratifying and merited compliment, voted to him by his late Colleagues.

We beg to subscribe ourselves, Sir,

Your obedient Servants,

(Signed) J. YOUNG.
JOHN TURNER,
A. R. JACKSON.

---

(From the *Bengal Hurkaru*, May 22d, 1845.)

We have much pleasure in giving a place to Dr. Falconer's letter, by which we learn that the Members of the Medical Service in England, duly appreciating the disinterested exertions of Mr. J. R. Martin to obtain the boon for them, had expressed a desire to join in the subscription to the Martin Testimonial, and were only prevented by his request, that no such addition might be made—a request founded in a considerate regard for the circumstances of Medical Officers at home. We quite agree, however, in thinking that it is due to Dr. Falconer and his brethren of the Profession, that their good intentions and their movement in this matter should be generally made known, for their coming forward, as they have done, is highly creditable to them, while the delicacy of Mr. Martin's motive for desiring that they should desist from their purpose is not less honorable to him, and cannot fail to raise him, if that be possible, in the estimation of the Service, and of all to whom his conduct on this occasion becomes known. The Bengal Medical Officers at home have been enabled, however, to record their participation in the sentiments of esteem and gratitude towards Mr. Martin, which have been expressed by the faculty in this country :—

*Oriental Club, March* 29, 1845.

MY DEAR MARTIN,

I have received your note, which I have communicated to my Medical friends in the Service here, and I have conferred with Turner on the subject.

As you have with such handsome consideration declined the addition of our mite to the "Testimonial," it is not for us to press the matter upon you; but I am glad that the occasion has furnished us with the opportunity of assuring you that we entirely participate in the sentiments of gratitude and esteem towards you, for your earnest and disinterested exertions in the matter of the boon, professed by our brethren in the Service in India, and that we would have gladly united with them in contributing to the Martin Testimonial, had not your own wishes been against it. We were quite ignorant of what had passed between you and the Home Committee on the subject, and should you have occasion to communicate with the Committee in India, we beg that you will mention what our intentions were. With the offer of our best wishes for your welfare,

Believe me, my dear Martin,

Your's very sincerely,

H. FALCONER.

To J. R. Martin, Esq., 71 Grosvenor Street.

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